KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

1. Refer to Kentucky-American's Response to Commission Staff's Second Request for Information (Staff's Second Request), Item 1.a and Item 4.a. Provide revised budget project schedules for the calendar years 2008 through 2017, eliminating the construction projects that were approved by the Capital Investment Management Committee (CIMC), but were not included in Kentucky-American's original construction budgets.

Response:

Approval of the Business Plan does not constitute approval of individual capital projects, which were included in the development of the Business Plan. Instead, approval of the Business Plan is an approval of the overall expected capital spend for the year. Since the projects are not approved with the Capital Business Plan, each project is approved through the Capital Investment Management Committee ("CIMC") for each stage of design and construction. During any given year, unexpected changes may occur due to outside influences, unexpected failures that affect the infrastructure's ability to serve the customer, or to meet regulatory requirements. In these cases, a previously unbudgeted new priority project is initiated to address the need or a budgeted project is changed. Since these changes were not identified during the original budgeting process, the need to offset the new project's expected cost is required to ensure that the overall company budget is maintained. As a result, projects that were originally identified within the budget are changed or delayed to make room for the new, unexpected projects or a change in an existing project so that the overall company capital spend for the year is maintained as presented in the Business Plan.

Please see the attached revised budget project schedules for calendar years 2008 through 2017. Because these schedules reflect only half of the equation when tradeoffs occur between projects, the Company does not feel that the schedules reasonably reflect the variance between the budgeted and actual capital spend for a year. The Company believes that schedule 1.a of Staff's Second Request is more indicative since it reflects both the addition of projects and the tradeoffs that occurred that allowed the Company to maintain the overall capital spend for each year.

Kentucky American Water
Case No. 2018-00358
Construction Projects

As of 2017

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

PSC Data Request 3
Schedule 1

Witness Responsible:
Brent O'Neill

Item	Description	Annual Actual	Annual Original Budget	Variance Dollars	Variance Percent	Percent of Budget
DV	DEVELOPER/GOVERNMENTAL CONTRIBUTIONS	$ 2,724,269	$ 2,500,000	$ 224,269	8.97%	10.01%
A	MAINS - NEW	$ 446,964	$ 313,500	$ 133,464	42.57%	1.26%
B	MAINS - REPLACED/RESTORED	$ 4,151,683	$ 6,500,000	$ (2,348,317)	-36.13%	26.03%
C	MAINS - UNSCHEDULED	$ 913,898	$ 335,000	$ 578,898	172.81%	1.34%
D	MAINS - RELOCATED	$ 1,078,724	$ 375,000	$ 703,724	187.66%	1.50%
E	HYDRANTS, VALVES, AND MANHOLES - NEW	$ 277,571	$ 200,100	$ 77,471	38.72%	0.80%
F	HYDRANTS, VALVES, AND MANHOLES - REPLACED	$ 610,905	$ 352,050	$ 258,855	73.53%	1.41%
G	SERVICES AND LATERALS - NEW	$ 1,245,152	$ 988,540	$ 256,612	25.96%	3.96%
H	SERVICES AND LATERALS - REPLACED	$ 537,742	$ 452,500	$ 85,242	18.84%	1.81%
I	METERS - NEW	$ 622,520	$ 374,220	$ 248,300	66.35%	1.50%
J	METERS - REPLACED	$ 1,800,116	$ 745,725	$ 1,054,391	141.39%	2.99%
K	ITS EQUIPMENT AND SYSTEMS	$ 398,906	$ 376,547	$ 22,359	5.94%	1.51%
L	SCADA EQUIPMENT AND SYSTEMS	$ 200,440	$ 250,000	$ (49,560)	-19.82%	1.00%
M	SECURITY EQUIPMENT AND SYSTEMS	$ 212,087	$ 219,083	$ (6,996)	-3.19%	0.88%
N	OFFICES AND OPERATIONS CENTERS	$ 136,053	$ 275,000	$ (138,947)	-50.53%	1.10%
O	VEHICLES	$ 678,854	$ 690,000	$ (11,146)	-1.62%	2.76%
P	TOOLS AND EQUIPMENT	$ 137,646	$ 176,300	$ (38,654)	-21.93%	0.71%
Q	PROCESS PLANT FACILITIES AND EQUIPMENT	$ 1,557,341	$ 1,800,000	$ (242,659)	-13.48%	7.21%
R	CAPITALIZED TANK REHABILIATION/PAINTING	$ -	$ -	$ -		0.00%
S	ENGINEERING STUDIES	$ 188,786	$ 50,000	$ 138,786	277.57%	0.20%
	TOTAL	17,919,659	16,973,565	946,094	5.57%	
	ENTER ITEM DV AND SUBTRACT	2,724,269	2,500,000	224,269		
	TOTAL ITEM A - S	15,195,390	14,473,565	721,825	4.99%	

Kentucky American Water

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Construction Projects

As of 2017

Type of Filing:_X__Original _____Updated _____Revised

Workpaper Reference No(s).:_____

Item	Description	Annual Actual	Annual Original Budget	Variance Dollars	Variance Percent	Percent of Budget
	BUDGET PROJECTS					
I12-000001	Post Acquisition BD Capex	-	$ 60,000	$ (60,000)	-100.00%	0.24%
I12-020021	Jacobson - Hays Booster Station	1,405,613	$ 1,500,000	$ (94,387)	-6.29%	6.01%
I12-020037	KRS1 Chemical Storage & Feed Improvements	505,882	$ 1,100,000	$ (594,118)	-54.01%	4.41%
I12-020039	Georgetown Bypass and US 25 Area (Delaplain Booster)	694,736	$ 1,100,000	$ (405,264)	-36.84%	4.41%
I12-020064	KRS 1 HS Pump #12	1,241,985	$ 1,680,000	$ (438,015)	-26.07%	6.73%
I12-020074	Athens Boonesboro Main Extension - Phase II	323,463	$ 1,400,000	$ (1,076,537)	-76.90%	5.61%
I12-020075	Richmond Rd Campus - Road Improvements	459,525	$ 405,885	$ 53,640	13.22%	1.63%
I12-300008	Owenton Distribution Building	70,211	$ 750,000	$ (679,789)	-90.64%	3.00%
		4,701,415	7,995,885	(3,294,470)	-41.20%	

Kentucky American Water
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Construction Projects

As of 2016

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

PSC Data Request 3
Schedule 1

Witness Responsible:
Brent O'Neill

Item	Description	Annual Actual	Annual Original Budget	Variance Dollars	Variance Percent	Percent of Budget
DV	DEVELOPER/GOVERNMENTAL CONTRIBUTIONS	$ 3,525,727	$ 2,500,000	$ 1,025,727	41.03%	11.61%
A	MAINS - NEW	$ 830,702	$ 1,265,000	$ (434,298)	-34.33%	5.88%
B	MAINS - REPLACED/RESTORED	$ 1,880,999	$ 3,671,000	$ (1,790,001)	-48.76%	17.05%
C	MAINS - UNSCHEDULED	$ 779,897	$ 335,000	$ 444,897	132.80%	1.56%
D	MAINS - RELOCATED	$ 5,523	$ 250,000	$ (244,477)	-97.79%	1.16%
E	HYDRANTS, VALVES, AND MANHOLES - NEW	$ 185,904	$ 200,100	$ (14,196)	-7.09%	0.93%
F	HYDRANTS, VALVES, AND MANHOLES - REPLACED	$ 767,220	$ 352,050	$ 415,170	117.93%	1.64%
G	SERVICES AND LATERALS - NEW	$ 1,116,725	$ 679,140	$ 437,585	64.43%	3.15%
H	SERVICES AND LATERALS - REPLACED	$ 502,658	$ 452,500	$ 50,158	11.08%	2.10%
I	METERS - NEW	$ 695,923	$ 374,220	$ 321,703	85.97%	1.74%
J	METERS - REPLACED	$ 1,007,763	$ 461,850	$ 545,913	118.20%	2.15%
K	ITS EQUIPMENT AND SYSTEMS	$ 219,957	$ 213,117	$ 6,840	3.21%	0.99%
L	SCADA EQUIPMENT AND SYSTEMS	$ 207,207	$ 260,000	$ (52,793)	-20.31%	1.21%
M	SECURITY EQUIPMENT AND SYSTEMS	$ 130,648	$ 112,350	$ 18,298	16.29%	0.52%
N	OFFICES AND OPERATIONS CENTERS	$ 148,055	$ 225,000	$ (76,945)	-34.20%	1.05%
O	VEHICLES	$ 580,252	$ 660,060	$ (79,808)	-12.09%	3.07%
P	TOOLS AND EQUIPMENT	$ 319,784	$ 283,060	$ 36,724	12.97%	1.31%
Q	PROCESS PLANT FACILITIES AND EQUIPMENT	$ 2,377,385	$ 1,725,500	$ 651,885	37.78%	8.01%
R	CAPITALIZED TANK REHABILIATION/PAINTING	$ (1,522)	$ -	$ (1,522)		0.00%
S	ENGINEERING STUDIES	$ 347,709	$ 50,000	$ 297,709	595.42%	0.23%
	TOTAL	15,628,515	14,069,947	1,558,568	11.08%	
	ENTER ITEM DV AND SUBTRACT	3,525,727	2,500,000	1,025,727		
	TOTAL ITEM A - S	12,102,788	11,569,947	532,841	4.61%	

Kentucky American Water
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As of 2016

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

Item	Description	Annual Actual	Annual Original Budget	Variance Dollars	Variance Percent	Percent of Budget
	BUDGET PROJECTS					
I12-000001	Post Acquisition BD	$ 9,508	$ 60,000	$ (50,492)	-84.15%	0.28%
I12-020021	Power Reliability @ Remote Sites	$ 67,361	$ 200,000	$ (132,639)	-66.32%	0.93%
I12-020032	RRS Filter Building Replacement	$ 5,841,467	$ 2,324,298	$ 3,517,169	151.32%	10.80%
I12-020037	KRS1 Chemical Storage and Feed Improvements	$ 27,420	$ 500,000	$ (472,580)	-94.52%	2.32%
I12-020040	KRS Valve House Rehabilitation (Phase 2)	$ 150,779	$ 1,100,000	$ (949,221)	-86.29%	5.11%
I12-020043	Athens Boonesboro Main Extension	$ 1,368,936	$ 1,051,100	$ 317,836	30.24%	4.88%
I12-020055	New Circle Rd Main Relocation Phase 2	$ 72,699	$ 775,000	$ (702,301)	-90.62%	3.60%
I12-020061	New Millersburg Tank & Pump Station	$ 993,408	$ 450,000	$ 543,408	120.76%	2.09%
I12-020064	KRSI HS Pump #12	$ 40,014	$ 1,000,000	$ (959,986)	-96.00%	4.64%
		8,571,593	7,460,398	1,111,195	14.89%	

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As of 2015

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

PSC Data Request 3
Schedule 1

Witness Responsible:
Brent O'Neill

Item	Description	Annual Actual	Annual Original Budget	Variance Dollars	Variance Percent	Percent of Budget
DV	DEVELOPER/GOVERNMENTAL CONTRIBUTIONS	$ 2,452,788	$ 2,000,000	$ 452,788	22.64%	6.82%
A	MAINS - NEW	$ 688,393	$ 750,000	$ (61,607)	-8.21%	2.56%
B	MAINS - REPLACED/RESTORED	$ 5,268,365	$ 3,117,000	$ 2,151,365	69.02%	10.63%
C	MAINS - UNSCHEDULED	$ 198,121	$ 335,000	$ (136,879)	-40.86%	1.14%
D	MAINS - RELOCATED	$ 456,058	$ 785,000	$ (328,942)	-41.90%	2.68%
E	HYDRANTS, VALVES, AND MANHOLES - NEW	$ 158,724	$ 200,100	$ (41,376)	-20.68%	0.68%
F	HYDRANTS, VALVES, AND MANHOLES - REPLACED	$ 1,517,543	$ 332,150	$ 1,185,393	356.88%	1.13%
G	SERVICES AND LATERALS - NEW	$ 968,162	$ 1,030,080	$ (61,918)	-6.01%	3.51%
H	SERVICES AND LATERALS - REPLACED	$ 400,865	$ 650,000	$ (249,135)	-38.33%	2.22%
I	METERS - NEW	$ 618,848	$ 542,412	$ 76,436	14.09%	1.85%
J	METERS - REPLACED	$ 551,455	$ 937,917	$ (386,462)	-41.20%	3.20%
K	ITS EQUIPMENT AND SYSTEMS	$ 136,935	$ 131,221	$ 5,714	4.35%	0.45%
L	SCADA EQUIPMENT AND SYSTEMS	$ 305,610	$ 140,000	$ 165,610	118.29%	0.48%
M	SECURITY EQUIPMENT AND SYSTEMS	$ 165,138	$ 245,000	$ (79,862)	-32.60%	0.84%
N	OFFICES AND OPERATIONS CENTERS	$ 93,664	$ 150,000	$ (56,336)	-37.56%	0.51%
O	VEHICLES	$ 584,522	$ 552,000	$ 32,522	5.89%	1.88%
P	TOOLS AND EQUIPMENT	$ 567,056	$ 305,000	$ 262,056	85.92%	1.04%
Q	PROCESS PLANT FACILITIES AND EQUIPMENT	$ 2,311,469	$ 1,454,875	$ 856,594	58.88%	4.96%
R	CAPITALIZED TANK REHABILIATION/PAINTING	$ -	$ -	$ -		0.00%
S	ENGINEERING STUDIES	$ 449,091	$ 42,020	$ 407,071	968.76%	0.14%
	TOTAL	17,892,807	13,699,775	4,193,032	30.61%	
	ENTER ITEM DV AND SUBTRACT	2,452,788	2,000,000	452,788		
	TOTAL ITEM A - S	15,440,019	11,699,775	3,740,244	31.97%	

Kentucky American Water

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Construction Projects

As of 2015

Type of Filing:_X__Original _____Updated _____Revised

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Item	Description	Annual Actual	Annual Original Budget	Variance Dollars	Variance Percent	Percent of Budget
	BUDGET PROJECTS					
I12-020011	New Circle Rd Main Relocation	$ 2,450,776	$ 1,009,593	$ 1,441,183	142.75%	3.44%
I12-020032	RRS Filter Building Replacement	$ 10,539,887	$ 11,925,000	$ (1,385,113)	-11.62%	40.68%
I12-020040	KRS Valve House Rehabilitation Ph 2	$ -	$ 1,000,000	$ (1,000,000)	-100.00%	3.41%
I12-020043	Athens Boonesboro main Extension	$ -	$ 400,000	$ (400,000)	-100.00%	1.36%
I12-020060	KRS Reeves Drive	$ 5,740		$ 5,740		0.00%
I12-300003	Northern Division Connection	$ 49,119		$ 49,119		0.00%
T12-0102	Business Transformation	$ (228,820)		$ (228,820)		0.00%
I12-000001	Acquisitions	$ -	$ 1,279,427	$ (1,279,427)	-100.00%	4.36%
		12,816,702	15,614,020	(2,797,318)	-17.92%	

Kentucky American Water
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Construction Projects

As of 2014

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Workpaper Reference No(s).:_____

PSC Data Request 3
Schedule 1

Witness Responsible:
Brent O'Neill

Item	Description	Annual Actual	Annual Original Budget	Variance Dollars	Variance Percent	Percent of Budget
DV	DEVELOPER/GOVERNMENTAL CONTRIBUTIONS	$ 3,214,462	$ 1,890,900	$ 1,323,562	70.00%	8.83%
A	MAINS - NEW	$ 982,178	$ 449,956	$ 532,222	118.28%	2.10%
B	MAINS - REPLACED/RESTORED	$ 3,662,352	$ 5,106,000	$ (1,443,648)	-28.27%	23.83%
C	MAINS - UNSCHEDULED	$ 291,349	$ 275,484	$ 15,865	5.76%	1.29%
D	MAINS - RELOCATED	$ 921,918	$ 515,079	$ 406,839	78.99%	2.40%
E	HYDRANTS, VALVES, AND MANHOLES - NEW	$ 201,082	$ 201,500	$ (418)	-0.21%	0.94%
F	HYDRANTS, VALVES, AND MANHOLES - REPLACED	$ 759,112	$ 340,764	$ 418,348	122.77%	1.59%
G	SERVICES AND LATERALS - NEW	$ 562,611	$ 1,101,429	$ (538,818)	-48.92%	5.14%
H	SERVICES AND LATERALS - REPLACED	$ 397,836	$ 451,903	$ (54,067)	-11.96%	2.11%
I	METERS - NEW	$ 313,704	$ 545,701	$ (231,997)	-42.51%	2.55%
J	METERS - REPLACED	$ 802,895	$ 1,194,748	$ (391,853)	-32.80%	5.58%
K	ITS EQUIPMENT AND SYSTEMS	$ 287,264	$ 279,455	$ 7,809	2.79%	1.30%
L	SCADA EQUIPMENT AND SYSTEMS	$ 40,279	$ 131,313	$ (91,034)	-69.33%	0.61%
M	SECURITY EQUIPMENT AND SYSTEMS	$ 157,258	$ 157,575	$ (317)	-0.20%	0.74%
N	OFFICES AND OPERATIONS CENTERS	$ 207,245	$ 126,060	$ 81,185	64.40%	0.59%
O	VEHICLES	$ 691,672	$ 562,018	$ 129,654	23.07%	2.62%
P	TOOLS AND EQUIPMENT	$ 241,065	$ 303,463	$ (62,398)	-20.56%	1.42%
Q	PROCESS PLANT FACILITIES AND EQUIPMENT	$ 3,162,463	$ 1,242,000	$ 1,920,463	154.63%	5.80%
R	CAPITALIZED TANK REHABILIATION/PAINTING	$ -	$ -	$ -		0.00%
S	ENGINEERING STUDIES	$ 261,770	$ 42,020	$ 219,750	522.97%	0.20%
	TOTAL	17,158,515	14,917,368	2,241,147	15.02%	
	ENTER ITEM DV AND SUBTRACT	3,214,462	1,890,900	1,323,562		
	TOTAL ITEM A - S	13,944,053	13,026,468	917,585	7.04%	

Kentucky American Water

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Construction Projects

As of 2014

Type of Filing:_X__Original _____Updated _____Revised

Workpaper Reference No(s).:_____

Item	Description	Annual Actual	Annual Original Budget	Variance Dollars	Variance Percent	Percent of Budget
	BUDGET PROJECTS					
I12-020007	North Upper St Main Repl	$ -	$ 1,000,000	$ (1,000,000)	-100.00%	4.67%
I12-020011	New Circle Rd Main Relocation	$ 287,933	$ 1,099,899	$ (811,966)	-73.82%	5.13%
I12-020017	KRS Valve House Rehabilitation	$ 691,347	$ 1,000,000	$ (308,653)	-30.87%	4.67%
I12-020032	RRS Filter Building Replacement	$ 709,175	$ 775,000	$ (65,825)	-8.49%	3.62%
I12-020033	KY 341 Interconnect	$ 758,006	$ 586,021	$ 171,985	29.35%	2.74%
I12-020036	Storage Tank and System Nitrification	$ -	$ 350,000	$ (350,000)	-100.00%	1.63%
I12-300003	Northern Division Connection	$ 369,307	$ 118,110	$ 251,197	212.68%	0.55%
I12-300005	Fairgrounds Tank Area		$ 500,000	$ (500,000)	-100.00%	2.33%
T12-0102	Business Transformation	$ 350,389	$ 117,256	$ 233,133	198.82%	0.55%
T12-0103	Business Transformation Other	$ 32		$ 32		0.00%
R12-K	ITS Centrally Sponsored	$ 1,336,514	$ 319,464	$ 1,017,050	318.36%	
	Acquisitions	$ -	$ 642,349	$ (642,349)	-100.00%	3.00%
		4,502,703	6,508,099	(2,005,396)	-30.81%	

Kentucky American Water
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As of 2013

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

PSC Data Request 3
Schedule 1

Witness Responsible:
Brent O'Neill

Item	Description	Annual Actual	Annual Original Budget	Variance Dollars	Variance Percent	Percent of Budget
DV	DEVELOPER/GOVERNMENTAL CONTRIBUTIONS	$ 1,972,625	$ 1,726,546	$ 246,079	14.25%	6.70%
A	MAINS - NEW	$ 849,856	$ 259,999	$ 589,857	226.87%	1.01%
B	MAINS - REPLACED/RESTORED	$ 1,645,060	$ 2,000,000	$ (354,940)	-17.75%	7.76%
C	MAINS - UNSCHEDULED	$ 369,365	$ 275,484	$ 93,881	34.08%	1.07%
D	MAINS - RELOCATED	$ 165,758	$ 480,079	$ (314,321)	-65.47%	1.86%
E	HYDRANTS, VALVES, AND MANHOLES - NEW	$ 151,975	$ 184,993	$ (33,018)	-17.85%	0.72%
F	HYDRANTS, VALVES, AND MANHOLES - REPLACED	$ 628,707	$ 305,696	$ 323,011	105.66%	1.19%
G	SERVICES AND LATERALS - NEW	$ 922,914	$ 1,042,445	$ (119,531)	-11.47%	4.04%
H	SERVICES AND LATERALS - REPLACED	$ 655,250	$ 1,011,321	$ (356,071)	-35.21%	3.92%
I	METERS - NEW	$ 747,902	$ 504,240	$ 243,662	48.32%	1.96%
J	METERS - REPLACED	$ 2,691,058	$ 2,862,739	$ (171,681)	-6.00%	11.11%
K	ITS EQUIPMENT AND SYSTEMS	$ 216,174	$ 315,805	$ (99,631)	-31.55%	1.23%
L	SCADA EQUIPMENT AND SYSTEMS	$ 1,006,570	$ 1,113,688	$ (107,118)	-9.62%	4.32%
M	SECURITY EQUIPMENT AND SYSTEMS	$ 83,068	$ 210,100	$ (127,032)	-60.46%	0.82%
N	OFFICES AND OPERATIONS CENTERS	$ 10,231	$ 105,050	$ (94,819)	-90.26%	0.41%
O	VEHICLES	$ 475,115	$ 541,008	$ (65,893)	-12.18%	2.10%
P	TOOLS AND EQUIPMENT	$ 655,282	$ 307,797	$ 347,485	112.89%	1.19%
Q	PROCESS PLANT FACILITIES AND EQUIPMENT	$ 1,382,796	$ 1,201,991	$ 180,805	15.04%	4.66%
R	CAPITALIZED TANK REHABILIATION/PAINTING		$ -	$ -		0.00%
S	ENGINEERING STUDIES	$ 54,556	$ 42,020	$ 12,536	29.83%	0.16%
	TOTAL	14,684,262	14,491,001	193,261	1.33%	
	ENTER ITEM DV AND SUBTRACT	1,972,625	1,726,546	246,079		
	TOTAL ITEM A - S	12,711,637	12,764,455	(52,818)	-0.41%	

Kentucky American Water

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Construction Projects

As of 2013

Type of Filing:_X__Original _____Updated _____Revised

Workpaper Reference No(s).:_____

Item	Description	Annual Actual	Annual Original Budget	Variance Dollars	Variance Percent	Percent of Budget
	BUDGET PROJECTS					
I12-020026	Pump Efficiency Repl Phase 2	$ -	$ 600,000	$ (600,000)	-100.00%	2.33%
I12-300003	Northern Division Connection	$ 10,920,412	$ 8,959,758	$ 1,960,654	21.88%	34.76%
T12-0102	Business Transformation	$ 2,355,991	$ 1,694,289	$ 661,702	39.05%	6.57%
T12-0103	Business Transformation Other	$ 145,601	$ 32,257	$ 113,344	351.38%	0.13%
I12--010001	IP Project Unbudgeted Capital	$ (5,255)		$ (5,255)		0.00%
		13,416,749	11,286,304	2,130,445	18.88%	

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As of 2012

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

PSC Data Request 3
Schedule 1

Witness Responsible:
Brent O'Neill

Item	Description	Annual Actual	Annual Original Budget	Variance Dollars	Variance Percent	Percent of Budget
DV	DEVELOPER/GOVERNMENTAL CONTRIBUTIONS	$ 2,252,402	$ 1,600,000	$ 652,402	40.78%	6.11%
A	MAINS - NEW	$ 52,013	$ 500,000	$ (447,987)	-89.60%	1.91%
B	MAINS - REPLACED/RESTORED	$ 673,049	$ 1,015,300	$ (342,251)	-33.71%	3.87%
C	MAINS - UNSCHEDULED	$ 372,392	$ 239,400	$ 132,992	55.55%	0.91%
D	MAINS - RELOCATED	$ (75,499)	$ 1,050,300	$ (1,125,799)	-107.19%	4.01%
E	HYDRANTS, VALVES, AND MANHOLES - NEW	$ 93,539	$ 210,000	$ (116,461)	-55.46%	0.80%
F	HYDRANTS, VALVES, AND MANHOLES - REPLACED	$ 229,888	$ 205,000	$ 24,888	12.14%	0.78%
G	SERVICES AND LATERALS - NEW	$ 910,629	$ 1,079,580	$ (168,951)	-15.65%	4.12%
H	SERVICES AND LATERALS - REPLACED	$ 449,290	$ 1,605,000	$ (1,155,710)	-72.01%	6.13%
I	METERS - NEW	$ 894,302	$ 1,200,000	$ (305,698)	-25.47%	4.58%
J	METERS - REPLACED	$ 3,601,691	$ 2,050,000	$ 1,551,691	75.69%	7.82%
K	ITS EQUIPMENT AND SYSTEMS	$ 712,828	$ 265,850	$ 446,978	168.13%	1.01%
L	SCADA EQUIPMENT AND SYSTEMS	$ 1,029,901	$ 659,025	$ 370,876	56.28%	2.52%
M	SECURITY EQUIPMENT AND SYSTEMS	$ 21,266	$ 20,000	$ 1,266	6.33%	0.08%
N	OFFICES AND OPERATIONS CENTERS	$ 465,392	$ 80,000	$ 385,392	481.74%	0.31%
O	VEHICLES	$ 925,249	$ 500,000	$ 425,249	85.05%	1.91%
P	TOOLS AND EQUIPMENT	$ 243,251	$ 220,500	$ 22,751	10.32%	0.84%
Q	PROCESS PLANT FACILITIES AND EQUIPMENT	$ 1,962,058	$ 1,095,000	$ 867,058	79.18%	4.18%
R	CAPITALIZED TANK REHABILIATION/PAINTING	$ -	$ -	$ -		0.00%
S	ENGINEERING STUDIES	$ (267,774)	$ 120,000	$ (387,774)	-323.15%	0.46%
	TOTAL	14,545,867	13,714,955	830,912	6.06%	
	ENTER ITEM DV AND SUBTRACT	2,252,402	1,600,000	652,402		
	TOTAL ITEM A - S	12,293,465	12,114,955	178,510	1.47%	

Kentucky American Water

Case No. 2018-00358

Construction Projects

As of 2012

Type of Filing:_X__Original _____Updated _____Revised

Workpaper Reference No(s).:_____

Item	Description	Annual Actual	Annual Original Budget	Variance Dollars	Variance Percent	Percent of Budget
	BUDGET PROJECTS					
IP-1202-6	Carrick Pike Main Extension	$ -	$ 50,000	$ (50,000)		0.19%
IP-1202-9	Todds and Cleveland Rd Main Ext	$ -	$ 799,594	$ (799,594)	-100.00%	3.05%
I12-0020009	US 25 Relocation	$ 1,225,541	$ 439,188	$ 786,353	179.05%	1.68%
I12-0200010	Leestown Road	$ 228,927	$ 809,540	$ (580,613)	-71.72%	3.09%
IP-1202-20	KY Major Highway	$ -	$ 655,000	$ (655,000)	-100.00%	2.50%
I12-020025	Pump Efficiency Replacement Phase 1	$ 953,765	$ 775,348	$ 178,417	23.01%	2.96%
IP-1202-37	Pump Efficiency Replacement Phase 2	$ -	$ 775,002	$ (775,002)	-100.00%	2.96%
I12-300003	Northern Division Connection	$ 3,978,519	$ 3,830,000	$ 148,519	3.88%	14.62%
T12-0102-P	Business Transformation	$ 3,835,463	$ 4,130,414	$ (294,951)	-7.14%	15.76%
T12-0103-P	Business Transformation Other	$ 562,289	$ 91,026	$ 471,263	517.72%	0.35%
	Acquisitions	$ -	$ 131,369	$ (131,369)	-100.00%	0.50%
I12-010001	IP Project Unbudgeted Capital	$ (214)		$ (214)		0.00%
		10,784,290	12,486,481	(1,702,191)	-13.63%	

Kentucky American Water
Case No. 2018-00358
Construction Projects

As of 2011

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

PSC Data Request 3
Schedule 1

Witness Responsible:
Brent O'Neill

Item	Description	Annual Actual	Annual Original Budget	Variance Dollars	Variance Percent	Percent of Budget
DV	DEVELOPER/GOVERNMENTAL CONTRIBUTIONS	$ 1,820,568	$ 2,300,000	$ (479,432)	-20.84%	9.11%
A	MAINS - NEW	$ 165,527	$ 489,000	$ (323,473)	-66.15%	1.94%
B	MAINS - REPLACED/RESTORED	$ 1,884,555	$ 1,005,300	$ 879,255	87.46%	3.98%
C	MAINS - UNSCHEDULED	$ 272,449	$ 138,500	$ 133,949	96.71%	0.55%
D	MAINS - RELOCATED	$ 375,492	$ 1,050,300	$ (674,808)	-64.25%	4.16%
E	HYDRANTS, VALVES, AND MANHOLES - NEW	$ 148,799	$ 195,000	$ (46,201)	-23.69%	0.77%
F	HYDRANTS, VALVES, AND MANHOLES - REPLACED	$ 283,383	$ 131,500	$ 151,883	115.50%	0.52%
G	SERVICES AND LATERALS - NEW	$ 592,606	$ 750,000	$ (157,394)	-20.99%	2.97%
H	SERVICES AND LATERALS - REPLACED	$ 633,636	$ 267,000	$ 366,636	137.32%	1.06%
I	METERS - NEW	$ 861,939	$ 600,000	$ 261,939	43.66%	2.38%
J	METERS - REPLACED	$ 5,403,895	$ 3,769,751	$ 1,634,144	43.35%	14.93%
K	ITS EQUIPMENT AND SYSTEMS	$ 175,356	$ 155,540	$ 19,816	12.74%	0.62%
L	SCADA EQUIPMENT AND SYSTEMS	$ 1,088,482	$ 200,000	$ 888,482	444.24%	0.79%
M	SECURITY EQUIPMENT AND SYSTEMS	$ 51,694	$ 20,000	$ 31,694	158.47%	0.08%
N	OFFICES AND OPERATIONS CENTERS	$ 548,021	$ 80,000	$ 468,021	585.03%	0.32%
O	VEHICLES	$ 559,415	$ 500,000	$ 59,415	11.88%	1.98%
P	TOOLS AND EQUIPMENT	$ 160,725	$ 160,000	$ 725	0.45%	0.63%
Q	PROCESS PLANT FACILITIES AND EQUIPMENT	$ 1,891,192	$ 1,085,000	$ 806,192	74.30%	4.30%
R	CAPITALIZED TANK REHABILIATION/PAINTING	$ 197,663	$ -	$ 197,663		0.00%
S	ENGINEERING STUDIES	$ 470,794	$ 400,000	$ 70,794	17.70%	1.58%
	TOTAL	17,586,191	13,296,891	4,289,300	32.26%	
	ENTER ITEM DV AND SUBTRACT	1,820,568	2,300,000	(479,432)		
	TOTAL ITEM A - S	15,765,624	10,996,891	4,768,733	43.36%	

Kentucky American Water

Case No. 2018-00358

Construction Projects

As of 2011

Type of Filing:_X__Original _____Updated _____Revised

Workpaper Reference No(s).:_____

Item	Description	Annual Actual	Annual Original Budget	Variance Dollars	Variance Percent	Percent of Budget
	BUDGET PROJECTS					
IP-1202-6	Carrick Pike Main Extension	$ (129,989)	$ 980,513	$ (1,110,502)	-113.26%	3.88%
IP-1202-18	US 25 Relocation	$ 415,236	$ 897,983	$ (482,747)	-53.76%	3.56%
IP-1202-19	Leestown Road	$ 666,047	$ 1,263,746	$ (597,699)	-47.30%	5.01%
IP-1202-21	KRS High Service Pumping	$ -	$ 660,000	$ (660,000)	-100.00%	2.61%
IP-1202-31	KRS Raw Water Access	$ -	$ 1,000,000	$ (1,000,000)	-100.00%	3.96%
IP-1232-3	Northern Division Connection	$ 344,375	$ 4,700,000	$ (4,355,625)	-92.67%	18.62%
IP-1233-1	Owenton WWTP Phosphorous	$ -	$ 140,000	$ (140,000)	-100.00%	0.55%
CS-1201-3	Business Transformation	$ 3,511,544	$ 2,304,462	$ 1,207,082	52.38%	9.13%
		4,807,214	11,946,704	(7,139,490)	-59.76%	

Kentucky American Water
Case No. 2018-00358
Construction Projects

As of 2010

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

PSC Data Request 3
Schedule 1

Witness Responsible:
Brent O'Neill

Item	Description	Annual Actual	Annual Original Budget	Variance Dollars	Variance Percent	Percent of Budget
DV	DEVELOPER/GOVERNMENTAL CONTRIBUTIONS	$ 2,112,707	$ 3,560,000	$ (1,447,293)	-40.65%	16.52%
A	MAINS - NEW	$ 82,273	$ 400,000	$ (317,727)	-79.43%	1.86%
B	MAINS - REPLACED/RESTORED	$ 999,914	$ 565,000	$ 434,914	76.98%	2.62%
C	MAINS - UNSCHEDULED	$ 269,042	$ 244,400	$ 24,642	10.08%	1.13%
D	MAINS - RELOCATED	$ 727,693	$ 950,000	$ (222,307)	-23.40%	4.41%
E	HYDRANTS, VALVES, AND MANHOLES - NEW	$ 107,571	$ 200,000	$ (92,429)	-46.21%	0.93%
F	HYDRANTS, VALVES, AND MANHOLES - REPLACED	$ 162,530	$ 175,000	$ (12,470)	-7.13%	0.81%
G	SERVICES AND LATERALS - NEW	$ 611,401	$ 874,660	$ (263,259)	-30.10%	4.06%
H	SERVICES AND LATERALS - REPLACED	$ 294,286	$ 1,240,975	$ (946,689)	-76.29%	5.76%
I	METERS - NEW	$ 436,640	$ 971,340	$ (534,700)	-55.05%	4.51%
J	METERS - REPLACED	$ 2,666,027	$ 1,584,929	$ 1,081,098	68.21%	7.35%
K	ITS EQUIPMENT AND SYSTEMS	$ 139,408	$ 111,090	$ 28,318	25.49%	0.52%
L	SCADA EQUIPMENT AND SYSTEMS	$ 487,125	$ 103,500	$ 383,625	370.65%	0.48%
M	SECURITY EQUIPMENT AND SYSTEMS	$ 25,405	$ 10,000	$ 15,405	154.05%	0.05%
N	OFFICES AND OPERATIONS CENTERS	$ 147,296	$ 80,000	$ 67,296	84.12%	0.37%
O	VEHICLES	$ 814,084	$ 250,000	$ 564,084	225.63%	1.16%
P	TOOLS AND EQUIPMENT	$ 129,297	$ 117,000	$ 12,297	10.51%	0.54%
Q	PROCESS PLANT FACILITIES AND EQUIPMENT	$ 1,882,344	$ 750,000	$ 1,132,344	150.98%	3.48%
R	CAPITALIZED TANK REHABILIATION/PAINTING	$ (11,628)	$ -	$ (11,628)		0.00%
S	ENGINEERING STUDIES	$ (46)	$ 100,000	$ (100,046)	-100.05%	0.46%
	TOTAL	12,083,370	12,287,894	(204,524)	-1.66%	
	ENTER ITEM DV AND SUBTRACT	2,112,707	3,560,000	(1,447,293)		
	TOTAL ITEM A - S	9,970,662	8,727,894	1,242,768	14.24%	

Kentucky American Water
Case No. 2018-00358
Construction Projects

As of 2010

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

Item	Description	Annual Actual	Annual Original Budget	Variance Dollars	Variance Percent	Percent of Budget
	BUDGET PROJECTS					
12020204	Source of Supply Project Dev	$ (2,114,108)	$ 128,360	$ (2,242,468)	-1747.01%	0.60%
IP-1202-5	North Broadway Main Replacement	$ 1,565,365	$ 1,151,929	$ 413,436	35.89%	5.34%
IP-1202-17	South Limestone Replacement	$ 549,929	$ 532,854	$ 17,075	3.20%	2.47%
IP-1202-18	US 25 Relocation	$ 1,215,244	$ 3,200,000	$ (1,984,756)	-62.02%	14.85%
IP-1202-31	KRS Raw Water Access	$ -	$ 50,000	$ (50,000)	-100.00%	0.23%
IP-1202-32	Lexington Operations Center	$ 2,670,832		$ 2,670,832		0.00%
CS-1201-3	Business Transformation CPS	$ 1,011,336	$ 4,036,079	$ (3,024,743)	-74.94%	18.72%
IP-1201-10	Unallocated Eng Clearing	$ (943)		$ (943)		0.00%
	Acquisitions	$ -	$ 168,000	$ (168,000)	-100.00%	0.78%
		$ -	$ -	$ -		0.00%
		4,897,656	9,267,222	(4,369,566)	-47.15%	

Kentucky American Water
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Construction Projects

As of 2009

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

PSC Data Request 3
Schedule 1

Witness Responsible:
Brent O'Neill

Item	Description	Annual Actual	Annual Original Budget	Variance Dollars	Variance Percent	Percent of Budget
DV	DEVELOPER/GOVERNMENTAL CONTRIBUTIONS	$ 2,547,151	$ 4,700,000	$ (2,152,849)	-45.81%	20.81%
A	MAINS - NEW	$ 641,032	$ 560,000	$ 81,032	14.47%	2.48%
B	MAINS - REPLACED/RESTORED	$ 592,723	$ 1,005,300	$ (412,577)	-41.04%	4.45%
C	MAINS - UNSCHEDULED	$ 198,334	$ 239,400	$ (41,066)	-17.15%	1.06%
D	MAINS - RELOCATED	$ 1,540,243	$ 1,005,300	$ 534,943	53.21%	4.45%
E	HYDRANTS, VALVES, AND MANHOLES - NEW	$ 65,173	$ 192,000	$ (126,827)	-66.06%	0.85%
F	HYDRANTS, VALVES, AND MANHOLES - REPLACED	$ 182,671	$ 150,000	$ 32,671	21.78%	0.66%
G	SERVICES AND LATERALS - NEW	$ 1,297,273	$ 980,000	$ 317,273	32.37%	4.34%
H	SERVICES AND LATERALS - REPLACED	$ 735,602	$ 1,400,000	$ (664,398)	-47.46%	6.20%
I	METERS - NEW	$ 615,748	$ 1,215,048	$ (599,300)	-49.32%	5.38%
J	METERS - REPLACED	$ 1,904,052	$ 2,000,000	$ (95,948)	-4.80%	8.86%
K	ITS EQUIPMENT AND SYSTEMS	$ 117,123	$ 102,000	$ 15,123	14.83%	0.45%
L	SCADA EQUIPMENT AND SYSTEMS	$ 64,074	$ 90,000	$ (25,926)	-28.81%	0.40%
M	SECURITY EQUIPMENT AND SYSTEMS	$ 14,280	$ 10,000	$ 4,280	42.80%	0.04%
N	OFFICES AND OPERATIONS CENTERS	$ 1,039,331	$ 560,000	$ 479,331	85.59%	2.48%
O	VEHICLES	$ 141,312	$ 500,000	$ (358,688)	-71.74%	2.21%
P	TOOLS AND EQUIPMENT	$ 51,035	$ 257,200	$ (206,165)	-80.16%	1.14%
Q	PROCESS PLANT FACILITIES AND EQUIPMENT	$ 720,748	$ 800,000	$ (79,252)	-9.91%	3.54%
R	CAPITALIZED TANK REHABILIATION/PAINTING	$ 58,420	$ 40,000	$ 18,420	46.05%	0.18%
S	ENGINEERING STUDIES	$ 38,832	$ 150,000	$ (111,168)	-74.11%	0.66%
	TOTAL	12,565,158	15,956,248	(3,391,090)	-21.25%	
	ENTER ITEM DV AND SUBTRACT	2,547,151	4,700,000	(2,152,849)		
	TOTAL ITEM A - S	10,018,007	11,256,248	(1,238,241)	-11.00%	

Kentucky American Water

Case No. 2018-00358

Construction Projects

As of 2009

Type of Filing:_X__Original _____Updated _____Revised

Workpaper Reference No(s).:_____

Item	Description	Annual Actual	Annual Original Budget	Variance Dollars	Variance Percent	Percent of Budget
	BUDGET PROJECTS					
02-04	SOURCE OF SUPPLY DEVELOPMENT	$ 106,607	$ 64,200	$ 42,407	66.06%	0.28%
04-02	MAJOR HIGHWAY RELOCATIONS (343)	$ 25,969	$ 49,930	$ (23,961)	-47.99%	0.22%
05-01	GROUND STORAGE TANK	$ -	$ 122,870	$ (122,870)	-100.00%	0.54%
05-08	KENTUCKY RELIABILITY IMPROVEMENT	$ 163,786	$ 80,000	$ 83,786	104.73%	0.35%
12020701	INCLINE CAR REPLACEMENT AT KRS	$ -	$ 815,288	$ (815,288)	-100.00%	3.61%
1202-5	NORTH BROADWAY MAIN REPLACEMENT	$ 1,264,105	$ 2,470,076	$ (1,205,971)	-48.82%	10.94%
1232-1	OWENTON CHEMICAL BULK STORAGE	$ 2,185	$ 29,123	$ (26,938)	-92.50%	0.13%
1202-6	CARRICK ROAD MAIN EXTENSION	$ 25,590	$ 2,637,494	$ (2,611,904)	-99.03%	11.68%
CS-1201-1	BUSINESS TRANSFORMATION	$ 211,056	$ 356,822	$ (145,766)	-40.85%	1.58%
		$ -	$ -	$ -		0.00%
		1,799,299	6,625,803	(4,826,504)	-72.84%	

Kentucky American Water
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Construction Projects

As of 2008

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

PSC Data Request 3
Schedule 1

Witness Responsible:
Brent O'Neill

Item	Description	Annual Actual	Annual Original Budget	Variance Dollars	Variance Percent	Percent of Budget
DV	DEVELOPER/GOVERNMENTAL CONTRIBUTIONS	$ 4,188,866	$ 4,000,000	$ 188,866	4.72%	18.21%
A	MAINS - NEW	$ 49,941	$ 535,000	$ (485,059)	-90.67%	2.44%
B	MAINS - REPLACED/RESTORED	$ 992,301	$ 1,886,000	$ (893,699)	-47.39%	8.58%
C	MAINS - UNSCHEDULED	$ 271,187	$ 221,937	$ 49,250	22.19%	1.01%
D	MAINS - RELOCATED	$ 145,363	$ -	$ 145,363		0.00%
E	HYDRANTS, VALVES, AND MANHOLES - NEW	$ 110,740	$ 427,992	$ (317,252)	-74.13%	1.95%
F	HYDRANTS, VALVES, AND MANHOLES - REPLACED	$ 129,360	$ 125,000	$ 4,360	3.49%	0.57%
G	SERVICES AND LATERALS - NEW	$ 1,157,819	$ 855,915	$ 301,904	35.27%	3.90%
H	SERVICES AND LATERALS - REPLACED	$ 1,137,151	$ 641,603	$ 495,548	77.24%	2.92%
I	METERS - NEW	$ 656,983	$ 1,149,930	$ (492,947)	-42.87%	5.23%
J	METERS - REPLACED	$ 1,656,513	$ 1,473,399	$ 183,114	12.43%	6.71%
K	ITS EQUIPMENT AND SYSTEMS	$ 259,958	$ 259,750	$ 208	0.08%	1.18%
L	SCADA EQUIPMENT AND SYSTEMS	$ 45,278	$ 51,000	$ (5,722)	-11.22%	0.23%
M	SECURITY EQUIPMENT AND SYSTEMS	$ 36,286	$ 10,000	$ 26,286	262.86%	0.05%
N	OFFICES AND OPERATIONS CENTERS	$ 1,800,000	$ 146,300	$ 1,653,700	1130.35%	0.67%
O	VEHICLES	$ 455,970	$ 500,000	$ (44,030)	-8.81%	2.28%
P	TOOLS AND EQUIPMENT	$ 224,128	$ 218,014	$ 6,114	2.80%	0.99%
Q	PROCESS PLANT FACILITIES AND EQUIPMENT	$ 858,216	$ 820,600	$ 37,616	4.58%	3.74%
R	CAPITALIZED TANK REHABILIATION/PAINTING	$ 97,252	$ -	$ 97,252		0.00%
S	ENGINEERING STUDIES	$ 105,355	$ 81,000	$ 24,355	30.07%	0.37%
	TOTAL	14,378,667	13,403,440	975,227	7.28%	
	ENTER ITEM DV AND SUBTRACT	4,188,866	4,000,000	188,866	4.72%	
	TOTAL ITEM A - S	10,189,801	9,403,440	786,361	8.36%	

Kentucky American Water

Case No. 2018-00358

Construction Projects

As of 2008

Type of Filing:_X__Original _____Updated _____Revised

Workpaper Reference No(s).:_____

Item	Description	Annual Actual	Annual Original Budget	Variance Dollars	Variance Percent	Percent of Budget
	BUDGET PROJECTS					
02-04	SOURCE OF SUPPLY DEVELOPMENT	$ 348,734	$ 64,200	$ 284,534	443.20%	0.29%
04-02	MAJOR HIGHWAY RELOCATIONS (343)	$ 290,942	$ 2,935,000	$ (2,644,058)	-90.09%	13.36%
05-06	SLUDGE HANDLING IMPROVEMENT	$ 172,653	$ 50,000	$ 122,653	245.31%	0.23%
05-08	KENTUCKY RELIABILITY IMPROVEMENT	$ 1,359,117	$ 1,210,964	$ 148,153	12.23%	5.51%
06-13	HIGHWAY RELOCATION - CLAYS MILL	$ -	$ 850,000	$ (850,000)	-100.00%	3.87%
12020701	INCLINE CAR REPLACEMENT AT KRS	$ 138,047	$ 280,709	$ (142,662)	-50.82%	1.28%
1202-5	NORTH BROADWAY MAIN REPLACEMENT	$ 299,377	$ 2,350,000	$ (2,050,623)	-87.26%	10.70%
1232-1	OWENTON CHEMICAL BULK STORAGE	$ 81,520	$ 824,836	$ (743,316)	-90.12%	3.75%
		2,690,390	8,565,709	(5,875,319)	-68.59%	

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Brent E. O'Neill/Melissa L. Schwarzell

2. Using the revised budget project schedules provided in the response to Item 1. above, provide a schedule that calculates the ten-year average slippage factor for the original construction budgets for calendar years 2008 through 2017.

Response:

Please find attached the ten-year average slippage factor using the revised budget project schedules provided in Commission Staff's Third Request Item 1. Because these slippage factors reflect only half of the equation when tradeoffs occur between projects, the Company does not feel that the schedules reasonably reflect the variance between the budgeted and actual capital spend for a year. Please see the Company's response to Commission Staff's Third Request Item 1 for further explanation.

Kentucky American Water
Case No. 2018-00358
Construction Projects

PSC Data Request 3
Schedule 2

Type of Filing:_X__Original _____Updated _____Revised
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Witness Responsible:
Brent O'Neill

Source: PSC_DR3_Schedule 1

Year	Annual Actual Cost	Annual Original Budget	Variance in Dollars	Variance as Percent	Slippage Factor
2008	12,880,191.40	17,969,149.00	(5,088,957.60)	-28.32%	71.679%
2009	11,817,305.39	17,882,050.69	(6,064,745.30)	-33.92%	66.085%
2010	14,868,318.05	17,995,115.70	(3,126,797.65)	-17.38%	82.624%
2011	20,572,837.39	22,943,595.00	(2,370,757.61)	-10.33%	89.667%
2012	23,077,755.00	24,601,436.00	(1,523,681.00)	-6.19%	93.807%
2013	26,128,386.00	24,050,759.00	2,077,627.00	8.64%	108.639%
2014	18,446,756.00	19,534,567.00	(1,087,811.00)	-5.57%	94.431%
2015	28,256,721.00	27,313,795.00	942,926.00	3.45%	103.452%
2016	20,674,381.10	19,030,344.86	1,644,036.24	8.64%	108.639%
2017	19,896,804.77	22,469,449.50	(2,572,644.73)	-11.45%	88.550%
Totals	196,619,456.10	213,790,261.75	(17,170,805.65)	-8.03%	91.968%

The Annual Actual Cost, Annual Original Budget, Variance in Dollars, and Variance as Percent are to be taken from Schedule 1 for Public Service Commission DR3.

The Slippage Factor is calculated by dividing the Annual Actual Cost by the Annual Original Budget. Calculate a Slippage Factor for each year and the Totals line. Carry Slippage Factor percentages to 3 decimal places.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

3. Refer to Kentucky-American's Response to Staff's Second Request, Item 4.a. Kentucky-American provided a schedule that lists each project by year and includes a description of each project but failed to provide a detailed reason for each project that was constructed but not included in the annual budget, as requested. Resubmit the response and include a detailed reason for each project that was constructed but not included in the annual budget for 2008–2017.

Response:

Attached please find the revised schedule to Staff's Second Request, Item 4.a. that has been modified to provide a detailed reason for each project that was constructed but not included in the annual budget for 2008–2017.

Kentucky American Water
Case No. 2018-00358
As of 2017

Type of Filing: _X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

PSC Data Request 3
Schedule 3

Witness Responsible:
Brent O'Neill

Item	Description	Annual Actual	Annual Original Budget	Description	Reason	Approved by CIM Committee	Actual Project Cost
BUDGET PROJECTS							
I12-020017	KRS Valve House Rehabilitation Phase 1	18,206	$ -	Renovation and rehabilitation of the Kentucky River Station Valve House Number 1 includes new valves and actuators; demolition of decommissioned piping and valves; corrective measures to mitigate flooding; improved access for piping and valves; relocation of electrical panels, boxes and SCADA; review and replacement of fluoride and chlorine lines as needed; and structural repairs.	Actual spend was a carryover of the project from 2016. Carryover of project was not budgeted. This project was approved due the impact that the operation of valve and actuators had on the ability of KRS1 to meet regulatory requirements of TTHM's formation at the facility and within the distribution system project as required by the Stage 2 Disinfectants and Disinfection Byproducts Rule.	$ 1,654,085	$ 1,307,199
I12-020035	KRS1 - Residual Improvements	136,265	$ -	This project will provide a near-term and intermediate solution to improve the residual handling at KRS1. Improvements expected are installation of gravity thickeners, upsize or increase number of washwater holding tanks, and create the long-term plan for dewatering at KRS1. Project need is the result of an overloading of the residual's system due to the operational change to address regulatory requirements of TTHM's formation at the facility and within the distribution system. Due to the excess loading of the sludge lagoons from the WWHTs and hydrotreator units, KAW runs the risk of overflowing one or more of the lagoons in to a nearby creek which runs through a sensitive conservation area, or exceeding the NPDES discharge limit for the total suspended solids (TSS).	Project need is the result of an overloading of the residual's system due to the operational change required to address regulatory requirements regarding the formation of TTHM's at the facility and within the distribution system due to the excess loading of the sludge lagoons from the WWHTs and Aldrich units. The overloading caused a short circuit in the lagoons and a discolored water discharge into the Kentucky River. In order to reduce the likely of a receiving an Notice of Violation for or exceeding the NPDES discharge limit for the total suspended solids (TSS) into the Kentucky River the project was approved.	$ 4,500,000	$ 639,371
I12-020040	KRS Valve House Rehabilitation (Phase 2)	690,300	$ -	Renovation and rehabilitation of the Kentucky River Station Valve House Number 3 includes new valves and actuators; demolition of decommissioned piping and valves; corrective measures to mitigate flooding; improved access for piping and valves; relocation of electrical panels, boxes and SCADA; review and replacement of fluoride and chlorine lines as needed; and structural repairs.	This project was approved due the impact that the operation of valve and actuators had on the ability of KRS1 to meet regulatory requirements of TTHM's formation at the facility and within the distribution system project as required by the Stage 2 Disinfectants and Disinfection Byproducts Rule. The age of the existing valves and actuators and the ability to access the valves required modifications to the valve house. In addition the project improved access for piping and valves and provided more efficient control of the operation of the hydrotreators and ability to feed chlorine more effectively.	$ 800,000	$ 900,544
I12-020043	Athens Boonesboro Main Extension	1,078,296	$ -	This project is phase 1 of the water system improvements along Athens-Boonesboro Road in Fayette County to allow for the connection of KAWC customers to the Company's Central Service Area. The water main extension of phase 1 and 2 will allow the Company to eliminate the use of purchased water for the customers in the area of the project and allow them to be served by KAWC's three water treatment facilities. The project will also enhance water pressures and water quality for customers in the area.	Due to recurring TTHM levels reaching levels that would have resulted in a Notice of Violation for exceedance and ongoing customer complaints of water quality as result of the purchased water utilized for the area required extensive ongoing flushing in the Ford Hampton Area. The ongoing flushing increased purchased water costs and O&M expense. Reduce O&M charges for purchased water from Winchester Municipal and enhance water pressure/water quality for customers served was reason for approval of project. Actual spend was a carryover of the project from 2016.	$ 2,450,000	$ 2,621,360
I12-020055	New Circle Rd Main Relocation Phase 2	72,441	$ -	This project includes the relocation of approximately 1,300 lineal feet of 20 inch water main and 1,500 lineal feet of 12 inch water main in response to the Kentucky Department of Transportation's widening of New Circle Road to increase safety and improve the flow of traffic. The project is located along New Circle Road between Georgetown Road and Boardwalk Avenue in Lexington.	Required relocation due to widening of New Circle Road by the KY Department of Transportation. Project schedule by KYDOT required approval of project.	$ 1,000,000	$ 187,842
I12-020067	RRS Chemical Facility	185,211	$ -	This project incorporates several components of chemical storage and delivery to enhance the robustness and reliability of Richmond Road Station (RRS) operations by minimizing the risk of plant shutdown due to insufficient chemical storage and feed. A major component of the project is the transition from chlorine gas and anhydrous ammonia to the safer liquid sodium hypochlorite and aqueous ammonia. The project will combine all of the chemicals used for the treatment of water at RRS, allowing for the consolidated storage and management of chemicals, which will lead to improved safety and efficiency for the operation of RRS.	Transition from chlorine gas and anhydrous ammonia to liquid sodium hypochlorite and aqueous ammonia which is a safer liquid. The project will combine all of the chemicals used for the treatment of water at the Richmond Road Station treatment facility allowing for the consolidated storage and management of chemicals, which will lead to improved safety and efficiency for the operation of RRS. Original plan was to have all chemical improvement projects run together under a single project. However due to difference in construction schedules and substantial completion dates of the projects, it was determined to establish individual projects.	$ 10,000,000	$ 1,418,528
I12-020073	KRS1 Raw Water Intake Pump Replacement	602,048	$ -	Kentucky Services will be the general contractor and will provide a turn key service to replace raw water pump number 6 at KRS1 that had failed. Kentucky Services will provide a 1250 HP motor, a Floway pump that will be identical to pump number 6, engineering and startup services, materials for install and materials for removal, and will transfer pump from landing on river to site.	Raw water pump #6 failed and required replacing	$ 761,700	$ 792,413
I12-020076	KRS1 - Replace Incline Car	230,480	$ -	This project will replace the existing incline car at the KRS 1 that was installed in 1956. The incline car is the main means for operators and maintenance personnel to gain access the KRS 1 low service intake pumps and structure. The project will replace the existing incline car with a new installation that will address safety concerns and increase the capacity for moving personnel and equipment to the low service intake pumps and structure.	Current incline car was installed in 1956 and no longer a safe method to transport personnel and equipment to intake pumps. Preliminary spending for design work and confirmation of solution was not budgeted, project was approved to allow for design on the incline car to commence in 2016 and carryover into 2017.	$ 1,450,000	$ 547,079
I12-020077	Millersburg - GAC Filter	343,697	$ -	This project will install a GAC System to support the Millersburg Water System. The GAC System is needed to mitigate the threat of THM's and HAA's from the Paris Water System. The GAC system also will reduce non-revenue water by decreasing the amount of flushing needed.	Mitigate the threat of exceed and of TTHM's and HAA's limits within Millersburg resulting from purchased water from Paris. The short term solution of increased flushing was not sustainable due to increased purchased water cost and stress on the Millersburg network. Project is long term solution to remove TTHM's from source prior transmission to Millersburg distribution system. Carry over from 2016	$ 620,000	$ 798,790

I12-020079	Jacobson Pump Station	115,432	$ -	This project will include the construction of a powder-activated carbon storage and feed system at the Jacobson Reservoir. Currently the Jacobson Pump Station provides source water from Reservoir 4 to Richmond Road Station, where the raw water is treated for taste and odor through a bag feed system. The construction of the powder-activated carbon feed system at the Jacobson Reservoir will allow operations staff to feed appropriate amounts of powder-activated carbon and treat taste and odor in an efficient manner.	Original plan was to have all chemical improvement projects run together under a single project. However due to difference in construction schedules and substantial completion dates of the projects, it was determined to establish individual projects. Project to enhance taste and odor for raw water delivered to the Richmond Road Station Water Treatment Plant	$ 948,409	$ 166,003
I12-020086	RRS WTP Sedimentation Basin Improvement	1,191,412	$ -	This project replaced the sedimentation basin weirs with a submerged weir system. This work improved the hydraulics and water quality for the Richmond Road Station facility. The submerged weir system reduced the amount of floating debris getting onto the filters and improved the performance of the sedimentation basin to provide optimal operation of the filters. The improvements also improved the hydraulic capabilities of the basins and ensured proper water levels during high demand periods for the facility.	This work improved the hydraulics and water quality for the Richmond Road Station facility. The project was approved to allow the project to occur during low flow period of facility and ensure completion prior to peak flow period the following year.	$ 1,375,000	$ 1,479,554
I12-020090	Brannon Rd Main Relocation	151,559	$ -	Relocation of approximately 8,308 feet of (24) inch ductile iron water main, hydrants, valves, and related appurtenances, and easement acquisition as part of a state roadway extension by the State Transportation Cabinet.	Required by the KY Department of Transportation. Project schedule by KYDOT required approval of project.	$ 1,550,000	$ 83,645
		4,815,347				$ 27,109,194	$ 10,942,326

Kentucky American Water
Case No. 2018-00358
As of 2016

Type of Filing:_X__Original _____Updated _____Revised
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PSC Data Request 3
Schedule 3

Witness Responsible:
Brent O'Neill

Item	Description	Annual Actual	Annual Original Budget	Description	Reason	Approved by CIM Committee	Actual Project Cost
	BUDGET PROJECTS						
I12-020011	New Circle Rd Main Relocation	$ (257,953)	$ -	The relocation of 1,730 lineal feet of 24-inch main, 2,070 lineal feet of 20-inch main, 380 lineal feet of 16-inch main, 1,680 lineal feet of 12-inch main and 860 lineal feet of 8-inch main due to the widening and reconstruction of New Circle Road from Versailles Road to Boardwalk by the Kentucky Transportation Cabinet.	Actual spend was a carryover of the project from 2015. Carryover of project was not budgeted.	$ 2,837,872	$ 2,195,618
I12-020012	KRS High Service Pump #15	$ 472,113	$ -	The replacement of KRS1 High Service Pumps #12 and #15 with new Vertical Turbine Pumps, Motors and VFDs.	Actual spend was a carryover of the project from 2015. Carryover of project was not budgeted.	$ 1,400,000	$ 1,254,840
I12-020017	KRS Valve House Rehabilitation #1	$ (502,394)	$ -	Renovation and rehabilitation of the Kentucky River Station Valve House Number 1 includes new valves and actuators; demolition of decommissioned piping and valves; corrective measures to mitigate flooding; improved access for piping and valves; relocation of electrical panels, boxes and SCADA; review and replacement of fluoride and chlorine lines as needed; and structural repairs.	Actual spend was a carryover of the project from 2015. Carryover of project was not budgeted. This project was approved due the impact that the operation of valve and actuators had on the ability of KRS1 to meet regulatory requirements of TTHM's formation at the facility and within the distribution system project as required by the Stage 2 Disinfectants and Disinfection Byproducts Rule.	$ 1,654,085	$ 1,307,199
I12-020033	KY 341 Interconnect	$ (2,162)	$ -	Install approximately 11,000 linear feet of pipe connecting into the 42-inch transmission main coming from KRS-2, providing a hydraulic loop for the northern portion of Kentucky's Central Division. Also, the new main will provide a secondary feed to existing customers.	Actual spend was a carryover of the project from 2015. Carryover of project was not budgeted.	$ 1,907,426	$ 1,303,436
I12-020046	KRS I Raw Water Intake Actuator Repl	$ 27,255	$ -	This project is to replace the oil accumulator system and its actuators at the Kentucky River Station #1 raw water intake with new hydroelectric actuators. The accumulator system is a single point of failure that powers all six (6) actuators on each of the six (6) 24" ball valves on the raw water intake pumps. The accumulator system has been a continuous maintenance issue at the intake which makes it very costly to maintain.	Actual spend was a carryover of the project from 2015. Carryover of project was not budgeted.	$ 689,982	$ 706,099
I12-020056	KRS Valve House Rehabilitation (Phase 1.B)	$ 344,733	$ -	Renovation and rehabilitation of the Kentucky River Station Valve House 2. Includes new valves and actuators; demolition of decommissioned piping and valves; corrective measures to mitigate flooding; improved access for piping and valves; relocation of electrical panels, boxes and SCADA; review and replacement of fluoride and chlorine lines as needed; and structural analysis. Including design, bidding and construction services.	Actual spend was a carryover of the project from 2015. Carryover of project was not budgeted.	$ 1,500,000	$ 867,228
I12-020057	Sludge Thickener Drive Upgrade	$ (215,369)	$ -	The purpose of this project is to increase the torque capacity of the sludge thickener drive at KRS2. Presently, the drive mechanism has failed multiple times due to maximum torque capacity being inadequate for current operating conditions. Additionally, a sludge pump was replaced as part of this project that failed.	Actual spend was a carryover of the project from 2015. Carryover of project was not budgeted.	$ 468,000	$ 306,195
I12-020058	KRS2 Intake Pump Replacement	$ 778,182	$ -	This project is for the replacement of two (2) new raw water intake pumps and a redundant flush water system at KRS2 WTP. This includes a study to determine the original intake pumps' failure modes as well as the design, bidding, construction administration and installation of the new pumps.	Actual spend was a carryover of the project from 2015. Carryover of project was not budgeted.	$ 1,243,624	$ 1,590,490
I12-020060	Reeves Drive	$ 397,245	$ -	The Reeves Drives were originally installed with the original hydrotreaters at KRS1 in the 1950's and 1960's. Due to the age, the original drive mechanism has now aged to a point where it is no longer possible to buy replacement components for the Reeves Drives that are presently installed. Also, due the current setup and design, the regular maintenance is difficult to perform.	Current drives are no longer repairable due to lack of replacement parts. Due to impact on ability to treat water effectively, project was approved in 2015 with spend occurring in 2016	$ 580,000	$ 584,741
I12-020062	Deer Lake Main Extension	$ 945,780	$ -	This project is necessary to help improve water quality by creating a hydraulic redundancy between two presently dead end water mains.	To improve water quality in Deer Lake area. Project originally planned as a Recurring Budget project but projected cost required project to be approved as an Investment Project	$ 1,026,130	$ 1,120,858
I12-300007	Pete Towles Main Extension	$ 1,149,430	$ -	Installation of 16,464 lineal feet of 6-inch PVC main to provide redundancy to the Northern District distribution system between Georgetown Road and Claxon Ridge Road	To provide redundancy to the Northern District distribution system. Project originally planned as a Recurring Budget project but projected cost required project to be approved as an Investment Project	$ 1,055,750	$ 1,167,656
I12-020065	KRSI - Cedar Creek Rd	$ 291,389	$ -	The private road to KRS1 is slowly falling into a state of disrepair requiring frequent maintenance and becoming impassable for chemical delivery trucks. This project will restore the entire road with the intent to turn the road over to the county for future maintenance.	Road to Kentucky River Station plant became impassable for chemical delivery trucks. Project ensured safe delivery of chemicals and reduced risk to adjacent landowners.	$ 340,000	$ 282,978

I12-020073	KRS1 Raw Water Intake Pump Replacement	$ 190,306	$ -	Kentucky Services will be the general contractor and will provide a turn key service to replace raw water pump number 6 at KRS1 that had failed. Kentucky Services will provide a 1250 HP motor, a Floway pump that will be identical to pump number 6, engineering and startup services, materials for install and materials for removal, and will transfer pump from landing on river to site.	Raw water pump #6 failed and required replacing	$ 761,700	$ 792,413
I12-020074	Athens Boonesboro Main Extension - Phase II	$ 23,823	$ -	This project will complete water system improvements along Athens-Boonesboro Road in Fayette County and make various improvements in Clark County to allow for the connection of KAWC customers to the Company's Central Service Area. The water main extension will occur along Athens-Boonesboro, Quisenberry, Waterworks, Old Stone Church and Combs Ferry roads and allow the Company to eliminate the use of purchased water for the customers in the area of the project and allow them to be served by KAWC's three water treatment facilities. The project will also enhance water pressures and water quality for customers in the area.	Due to recurring TTHM levels reaching levels that would have resulted in a Notice of Violation for exceedence and ongoing customer complaints of water quality as result of the purchased water utilized for the area required extensive ongoing flushing in the Ford Hampton Area. The ongoing flushing increased purchased water costs and O&M expense. Reduce O&M charges for purchased water from Winchester Municipal and enhance water pressure/water quality for customers served was reason for approval of project. Design started in 2016	$ 1,750,000	$ 1,590,878
I12-020075	Richmond Rd Campus - Road Improvements	$ 50,563	$ -	This project will improve several of the roads on the Richmond Road campus, in particular, the main drive from the front gate up to the new road going up to the filter building, the road between production and the turn toward field operations, and the road between the three way stop just past the main gate going up to the stop sign near the Dinsmore Gate.	Roads were in disrepair creating safety issues. Project originally planned as a Recurring Budget project but projected cost required project to be approved as an Investment Project	$ 650,000	$ 510,088
I12-020076	KRS1 - Replace Incline Car	$ 140,115	$ -	This project will replace the existing incline car at the KRS 1 that was installed in 1956. The incline car is the main means for operators and maintenance personnel to gain access the KRS 1 low service intake pumps and structure. The project will replace the existing incline car with a new installation that will address safety concerns and increase the capacity for moving personnel and equipment to the low service intake pumps and structure.	Current incline car was installed in 1956 and no longer a safe method to transport personnel and equipment to intake pumps. Preliminary spending for design work and confirmation of solution was not budgeted, project was approved to allow for design on the incline car to commence.	$ 1,450,000	$ 547,079
I12-020077	Millersburg GAC Filter	$ 471,912	$ -	This project will install a GAC System to support the Millersburg Water System. The GAC System is needed to mitigate the threat of THM's and HAA's from the Paris Water System. The GAC system also will reduce non-revenue water by decreasing the amount of flushing needed.	Mitigate the threat of exceedance of TTHM's and HAA's limits within Millersburg resulting from purchased water from Paris. The short term solution of increased flushing was not sustainable due to increased purchased water cost and stress on the Millersburg network. Project is long term solution to remove TTHM's from source prior transmission to Millersburg distribution system.	$ 621,780	$ 798,790
I12-300009	Freshwater Source - KRS2 & Low Srvc Pump	$ 445,840	$ -	This project will provide a freshwater line for both KRS2 and the low service pumps. The new closed bearings required a freshwater source. The new line provided redundancy for the bearings and chemical feeds located in the intake building.	Following failure of Low Service Water Pumps it was determined that the use of a water flushed bearing would increase life of pumps. Project approved to provide fresh water to new low service pumps installed in 2015	$ 486,294	$ 507,433
		4,750,807	0			$ 20,422,643	$ 17,434,019

Kentucky American Water
Case No. 2018-00358
As of 2015

PSC Data Request 3
Schedule 3

Witness Responsible:
Brent O'Neill

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Workpaper Reference No(s).:_____

Item	Description	Annual Actual	Annual Original Budget	Description	Reason	Approved by CIM Committee	Actual Project Cost
	BUDGET PROJECTS						
I12-020010	Leestown Road	$ (2,903)	$ -	The relocation of 8,184 lineal feet of 16-inch main, 511 lineal feet of 12-inch main and 1,419 lineal feet of 8 inch main due to the widening and reconstruction of Leestown Road from New Circle Road to Mastererson Station Park by the Kentucky Transportation Cabinet.	Actual spend was a carryover of the project from 2014. Carryover of project was not budgeted.	$ 2,181,774	$ 2,058,699
I12-020012	KRS High Service Pumps	$ 727,565	$ -	The replacement of KRS1 High Service Pumps #12 and #15 with new Vertical Turbine Pumps, Motors and VFDs.	Actual spend was a carryover of the project from 2014. Carryover of project was not budgeted due to delays that occurred during 2014.	$ 1,400,000	$ 1,254,840
I12-020017	KRS Valve House Rehabilitation	$ 964,373	$ -	Renovation and rehabilitation of the Kentucky River Station Valve House Number 1 includes new valves and actuators; demolition of decommissioned piping and valves; corrective measures to mitigate flooding; improved access for piping and valves; relocation of electrical panels, boxes and SCADA; review and replacement of fluoride and chlorine lines as needed; and structural repairs.	This project was approved due the impact that the operation of valve and actuators had on the ability of KRS1 to meet regulatory requirements of TTHM's formation at the facility and within the distribution system project as required by the Stage 2 Disinfectants and Disinfection Byproducts Rule. The age of the existing valves and actuators and the ability to access the valves required modifications to the valve house. In addition the project improved access for piping and valves and provided more efficient control of the operation of the hydrotreators and ability to feed chlorine more effectively.	$ 1,654,085	$ 1,307,199
I12-020056	KRS Valve House 2	$ 496,064	$ -	Renovation and rehabilitation of the Kentucky River Station Valve House 2. Includes new valves and actuators; demolition of decommissioned piping and valves; corrective measures to mitigate flooding; improved access for piping and valves; relocation of electrical panels, boxes and SCADA; review and replacement of fluoride and chlorine lines as needed; and structural analysis. Including design, bidding and construction services.	This project was approved due the impact that the operation of valve and actuators had on the ability of KRS1 to meet regulatory requirements of TTHM's formation at the facility and within the distribution system project as required by the Stage 2 Disinfectants and Disinfection Byproducts Rule. The age of the existing valves and actuators and the ability to access the valves required modifications to the valve house. In addition the project improved access for piping and valves and provided more efficient control of the operation of the hydrotreators and ability to feed chlorine more effectively.	$ 1,500,000	$ 867,227
I12-020045	Main Office Roof Replacement	$ 2,506	$ -	This project addressed the roof of the administration office for Kentucky American Water at 2300 Richmond Road that had reached and exceeded its design life. Prior to the project water leakage from the roof had become an increasing issue due to the roof being approximately 30 years old. The project removed the existing roof system and replaced it with a new EPDM membrane roof and add additional insulation to assist with energy efficiency. In addition replacement of the skylights was accomplished along with other minor improvements associated with the building gutters and penthouse structure.	Actual spend was a carryover of the project from 2014. Carryover of project was not budgeted. Roof exceeded life span and required extensive repairs. Project will reduce O&M costs.	$ 405,875	$ 393,807
I12-020046	KRS I Raw Water Intake Actuator Repl	$ 191,174	$ -	This project is to replace the oil accumulator system and its actuators at the Kentucky River Station #1 raw water intake with new hydroelectric actuators. The accumulator system is a single point of failure that powers all six (6) actuators on each of the six (6) 24" ball valves on the raw water intake pumps. The accumulator system has been a continuous maintenance issue at the intake which makes it very costly to maintain.	Actual spend was a carryover of the project from 2014. Carryover of project was not budgeted.	$ 689,982	$ 706,099
I12-020047	Field Ops Road Replacement	$ 18,809	$ -	This project includes the design, bid and reconstruction of approximately 1,320 feet of 21 ft wide roadway from the Field Operations center at the Richmond Road Facilities to the first three-way intersection. Existing roadway in a state of deterioration.	Actual spend was a carryover of the project from 2014. Carryover of project was not budgeted.	$ 327,458	$ 352,752
I12-020048	Security Upgrades Richmond Rd Campus	$ 31,242	$ -	Add enterprise security upgrades at the office building and distribution building at RICHMOND ROAD WTP, in LEXINGTON, KY. This includes access control, intrusion detection, and cameras with associated wiring and infrastructure.	Actual spend was a carryover of the project from 2014. Carryover of project was not budgeted. Increase security of the Richmond Rd treatment facility. Project originally planned as a Recurring Budget project but projected cost required project to be approved as an Investment Project	$ 429,450	$ 459,754
I12-020057	Sludge Thickener Drive Upgrade	$ 521,564	$ -	The purpose of this project is to increase the torque capacity of the sludge thickener drive at KRS2. Presently, the drive mechanism has failed multiple times due to maximum torque capacity being inadequate for current operating conditions. Additionally, a sludge pump was replaced as part of this project that failed.	Existing torque capacity was inadequate to support current operations and jeopardized the ability of the facility to treat backwash water. Increase the torque capacity of the sludge thickener drive at Kentucky River Station 2. Project approved to ensure facility to maintain optimum operations.	$ 468,000	$ 306,195

I12-020058	KRS2 Intake Pump Replacement	$ 601,163	$ -	This project is for the replacement of two (2) new raw water intake pumps and a redundant flush water system at KRS2 WTP. This includes a study to determine the original intake pumps' failure modes as well as the design, bidding, construction administration and installation of the new pumps.	Project to address intake pump failure at Kentucky River Station.	$ 1,243,624	$ 1,590,490
I12-020059	KRS2 Transfer Switch	$ 66,400	$ -	This project is for the design of an automatic transfer switch (ATS) for Kentucky River Station 2 (KRS-2) to transfer from 5 KV utility power to the standby generator and back to utility power. This process is currently accomplished by manual transfer and re-transfer.	Project authorized to address safety issues. Project was approved for design, but construction did not commence during 2015.	$ 1,007,467	$ 67,561
I12-020060	KRS Reeves Drive	$ 5,740		The Reeves Drives were originally installed with the original hydrotreaters at KRS1 in the 1950's and 1960's. Due to the age, the original drive mechanism has now aged to a point where it is no longer possible to buy replacement components for the Reeves Drives that are presently installed. Also, due the current setup and design, the regular maintenance is difficult to perform.	Actual spend was a carryover of the project from 2014. Carryover of project was not budgeted. Continued failure of 50+ years old drive and inability to obtain replacement parts placed the Kentucky River Station in jeopardy of not meeting regulatory requirements. Project approved to address failure.	$ 580,000	$ 584,741
I12-300003	Northern Division Connection	$ 49,119		Construction of approximately 84,600 lineal feet of 16-inch main along US 127 from KRS II to Owenton to allow for the retirement of the Owenton Water Treatment Plant. The project will also include the construction of a 2 MGD booster station with a 300,000 gallon elevated storage tank north of Monterey and the construction of a 600,000 gallon elevated storage tank within Owenton	Actual spend was a carryover of the project from 2014. Carryover of project was not budgeted.	$ 14,358,853	$ 15,308,044
T12-0102	Business Transformation	$ (228,820)				$ 26,246,569	$ 25,257,409
R12-K	ITS Centrally Sponsored	$ 1,690,479	$ -				
		5,134,475	0				

Kentucky American Water
Case No. 2018-00358
As of 2014

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PSC Data Request 3
Schedule 3

Witness Responsible:
Brent O'Neill

Item	Description	Annual Actual	Annual Original Budget	Description	Reason	Approved by CIM Committee	Actual Project Cost
	BUDGET PROJECTS						
I12-020001	WTP for Pool 3	$ 33,935	$ -	This project includes a new water treatment plant with a reliable capacity of 20 MGD, raw water intake, raw water pump station, raw water main, approx 31 miles of finished water main, 20 MGD pump station, 3 MG storage tank and system improvements.	Actual spend was a carryover of the project. Carryover of project was not budgeted.	$ 162,297,120	$ 164,195,640
I12-020025	Pump Efficiency Repl Phase 1	$ 18,370	$ -	The Jacobson Reservoir Pump Station (JRPS) transfers raw water from the Jacobson Reservoir to the Richmond Road Station (RRS) for treatment. The pumping equipment, electrical systems, and permanganate feed system are in need of replacement, including new pumps and motors, new 480-volt electrical service, a bulk liquid sodium permanganate feed system, and a sodium permanganate application point on the pump station discharge main. All three pumping units will be replaced with new horizontal split case centrifugal pumps, each of equivalent capacity. The pumps will be sized to deliver at least 16.7 mgd with one unit out of service, and 25 mgd with all units in service operating at full speed. Chemical improvements will include the existing dry potassium permanganate system being replaced with a liquid sodium permanganate (40% solution) system and related feed equipment. Raw water flow metering will be installed to measure raw water flow into Jacobson Reservoir from the Kentucky River Station I (KRS I)	Actual spend was a carryover of the project from 2013. Carryover of project was not budgeted.	$ 3,545,584	$ 3,559,485
I12-020027	Russell Cave Rd	$ (2,188)	$ -	The installation of three control valves and installation of a pressure reducing valve within the distribution system around Russell Cave storage tank to improve the turn over of the tank and improve the operation of the northern portion of the distribution system.	Actual spend was a carryover of the project from 2013. Carryover of project was not budgeted.	$ 749,989	$ 564,634
I12-020045	Main Office Roof Replacement	$ 391,301	$ -	This project addressed the roof of the administration office for Kentucky American Water at 2300 Richmond Road that had reached and exceeded its design life. Prior to the project water leakage from the roof had become an increasing issue due to the roof being approximately 30 years old. The project removed the existing roof system and replaced it with a new EPDM membrane roof and add additional insulation to assist with energy efficiency. In addition replacement of the skylights was accomplished along with other minor improvements associated with the building gutters and penthouse structure.	Roof exceeded life span and required extensive repairs to address increase in roof leaks. Project originally planned as a Recurring Budget project but projected cost required project to be approved as an Investment Project	$ 405,875	$ 393,807
I12-020046	KRS I Raw Water Intake Actuator Repl	$ 487,670	$ -	This project is to replace the oil accumulator system and its actuators at the Kentucky River Station #1 raw water intake with new hydroelectric actuators. The accumulator system is a single point of failure that powers all six (6) actuators on each of the six (6) 24" ball valves on the raw water intake pumps. The accumulator system has been a continuous maintenance issue at the intake which makes it very costly to maintain.	Review of accumulator system indicated that ongoing maintenance issues could result in a single point of failure that powers all six (6) actuators on each of the six (6) 24" ball valves on the raw water intake pumps that would jeopardize the ability of Kentucky River Station and Richmond Road Station to obtain raw water. Project approved to address concern of failure and to address possible oil contamination of Kentucky River if failure of oil accumulator occurred.	$ 689,982	$ 706,099
I12-020047	Field Ops Road Replacement	$ 333,943	$ -	This project includes the design, bid and reconstruction of approximately 1,320 feet of 21 ft wide roadway from the Field Operations center at the Richmond Road Facilities to the first three-way intersection. Existing roadway in a state of deterioration.	Project originally planned as a Recurring Budget project but projected cost required project to be approved as an Investment Project. Road was in disrepair creating safety issues to employee and delivery traffic.	$ 327,458	$ 352,752
I12-020048	Security Upgrades Richmond Rd Campus	$ 428,512	$ -	Add enterprise security upgrades at the office building and distribution building at RICHMOND ROAD WTP, in LEXINGTON, KY. This includes access control, intrusion detection, and cameras with associated wiring and infrastructure.	Project originally planned as a Recurring Budget project but projected cost required project to be approved as an Investment Project. Increase security of the Richmond Rd treatment facility	$ 429,450	$ 459,754
T12-0103	Business Transformation Other	$ 32				$ 168,445,458	$ 170,232,171
		1,691,575	0				

Kentucky American Water
Case No. 2018-00358
As of 2013

PSC Data Request 3
Schedule 3

Witness Responsible:
Brent O'Neill

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

Item	Description	Annual Actual	Annual Original Budget	Description	Reason	Approved by CIM Committee	Actual Project Cost
	BUDGET PROJECTS						
I12-020001	New WTP On Pool 3 of Kentucky	$ 29,379	$ -	This project includes a new water treatment plant with a reliable capacity of 20 MGD, raw water intake, raw water pump station, raw water main, approx 31 miles of finished water main, 20 MGD pump station, 3 MG storage tank and system improvements.	Actual spend was a carryover of the project. Carryover of project was not budgeted.	$ 162,297,120	$ 164,195,640
I12-020009	US 25 Relocation - Item 7-122.50	$ (1,612,868)	$ -	The relocation of 3,546 lineal feet of 24-inch main, 1,004 lineal feet of 16-inch main, 11,242 lineal feet of 12-inch main and 781 lineal feet of 8-inch main due to the widening and reconstruction of US 25 (Georgetown Road) from Ironworks Pike and the Georgetown By-Pass by the Kentucky Transportation Cabinet.	Reimbursement of work performed in 2012. Carryover of project was not budgeted. Required by KY Department of Transportation	$ 1,147,026	$ 1,079,811
I12-020010	Leestown Road - Item 7-223.00	$ 1,284,533	$ -	The relocation of 8,184 lineal feet of 16-inch main, 511 lineal feet of 12-inch main and 1,419 lineal feet of 8 inch main due to the widening and reconstruction of Leestown Road from New Circle Road to Mastererson Station Park by the Kentucky Transportation Cabinet.	Required by KY Department of Transportation	$ 1,823,761	$ 2,058,699
I12-020027	Russell Cave Rd Sys Improvements	$ 38,957	$ -	The installation of three control valves and installation of a pressure reducing valve within the distribution system around Russell Cave storage tank to improve the turn over of the tank and improve the operation of the northern portion of the distribution system.	Actual spend was a carryover of the project from 2012. Carryover of project was not budgeted. Project was approved to improve the turn over of the Russell Cave storage tank and improve operations in the northern portion of the distribution system.	$ 749,989	$ 564,634
I12-020032	RRS Filter Building Replacement	$ 54,256	$ -	The filter piping gallery at the Richmond Road Station was in very poor condition and requires extensive upgrades or replacement. Significant amount of pipe, pipe fittings, valves, and electrical equipment located in the filter pipe gallery was in need of replacement due to corrosion. Additionally, the filter piping gallery was also congested that made the maintenance required to keep the facility in full operation extremely difficult resulting in diminished operating capacity of the filters. Due to the extensive improvements needed to address the deficiencies noted above, it was recommended a new filter building and chlorine contact basin be constructed.	Design work started ahead of schedule and wasn't budgeted for 2013.	$ 15,609,446	$ 15,207,755
I12-020033	KY 341 Interconnect	$ 86,925	$ -	Install approximately 11,000 linear feet of pipe connecting into the 42-inch transmission main coming from KRS-2, providing a hydraulic loop for the northern portion of Kentucky's Central Division. Also, the new main will provide a secondary feed to existing customers.	Actual spend was a carryover of the project. Carryover of project was not budgeted.	$ 1,907,426	$ 1,303,436
I12-020034	RRS Chlorine Scrubber	$ 291,365	$ -	Richmond Road Station (RRS) was equipped with an existing liquid caustic scrubber which is designed to neutralize chlorine gas that may be emitted during an accidental chlorine gas leak. The previous scrubber was located on a concrete slab behind the chlorine storage building and was sized to neutralize the contents of one completely full one-ton chlorine cylinder during an accidental release. Years of weather exposure have caused many of the crucial system components to become inoperable making reliability of the unit questionable. The project will replace the aging RRS liquid caustic scrubber with a dry media type scrubber similar to the unit installed at Kentucky River Station Plant 2. The new scrubber will reduce ongoing maintenance expense and increases reliability.	Review of scrubber determined that years of weather exposure have caused many of the crucial system components to become inoperable making reliability of the unit questionable. Due to importance of community and employee safety project was approved to replace the aging RRS liquid caustic scrubber with a dry media type scrubber similar to the unit installed at Kentucky River Station Plant 2.	$ 450,000	$ 311,705
I12--010001	IP Project Unbudgeted Capital	$ (5,255)					
		167,292	0			$ 183,984,768	$ 184,721,680

Kentucky American Water
Case No. 2018-00358
As of 2012

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

PSC Data Request 3
Schedule 3

Witness Responsible:
Brent O'Neill

Item	Description	Annual Actual	Annual Original Budget	Description	Reason	Approved by CIM Committee	Actual Project Cost
	BUDGET PROJECTS						
I12-020001	New WTP On Pool 3 of Kentucky	$ 2,854	$ -	This project includes a new water treatment plant with a reliable capacity of 20 MGD, raw water intake, raw water pump station, raw water main, approx 31 miles of finished water main, 20 MGD pump station, 3 MG storage tank and system improvements.	Actual spend was a carryover of the project. Carryover of project was not budgeted.	$ 162,297,120	$ 164,195,640
I12-020027	Russell Cave Road Sys Impr	$ 89,292	$ -	The installation of three control valves and installation of a pressure reducing valve within the distribution system around Russell Cave storage tank to improve the turn over of the tank and improve the operation of the northern portion of the distribution system.	Actual spend was a carryover of the project from 2011. Carryover of project was not budgeted. Project to improve the turn over of the Russell Cave storage tank and improve operations in the northern portion of the distribution system.	$ 749,989	$ 564,634
IP-1232-3	Northern Division Connection	$ (346,828)	$ -	Construct approx. 84,600lf of 16" DI main along US 127 from KRSII WTP to Owenton. Construct a 2MGD booster station with a 300,000 gallon elevated storage tank north of Monterey. Construct a 600,000 gallon elevated storage tank in Owenton.	Actual spend was a carryover of the project from 2011. Carryover of project was not budgeted.	$ 14,104,868	$ 15,308,044
CS-1201-1	Business Transformation CPS	$ -	$ -	Comprehensive review of major business process areas including back office, operation and HR to determine opportunities for improvement of those areas.	Actual spend was a carryover of the project from 2011. Carryover of project was not budgeted.	$ 249,865	$ 212,040
I12-010001	IP Project Unbudgeted Capital	$ (214)				Project Cancelled	
		(254,896)	0			$ 177,401,842	$ 180,280,358

Kentucky American Water
Case No. 2018-00358
As of 2011

Type of Filing: _X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

PSC Data Request 3
Schedule 3

Witness Responsible:
Brent O'Neill

Item	Description	Annual Actual	Annual Original Budget	Description	Reason	Approved by CIM Committee	Actual Project Cost
	BUDGET PROJECTS						
12020204	Source of Supply Project Dev	$ -		Project established to facilitate water supply project plan development including the current Kentucky Public Service Commission proceeding and the Bluegrass Water Supply Consortium regional study efforts.		$ 1,364,872	$ 2,749
IP-1202-5	North Broadway Main Replacement	$ (79,129)		Construction of 5,400 LF of 12" pipe along North Broadway from Church Street to Loudon Avenue to replace an existing 6" main which was installed between 1885 and 1935. The existing main is no longer sufficient to carry needed fire flows.	Actual spend was a carryover of the project from 2010. Carryover of project was not budgeted.	$ 3,136,145	$ 3,059,378
IP-1202-17	South Limestone Replacement	$ (108)		Existing 6" and 8" mains dating back over 100 years no longer provide adequate flows to the downtown district. Replace existing 6" and 8" CI mains with approx 5,100 LF of 12: DI main along Limestone street.	Actual spend was a carryover of the project from 2010. Carryover of project was not budgeted.	$ 532,854	$ 549,959
IP-1202-32	Lexington Operations Center	$ 138,043		Operations Center - Richmond Rd Campus	Actual spend was a carryover of the project from 2010. Carryover of project was not budgeted.	$ 2,756,632	$ 2,808,876
IP-1202-38	Russell Cave Road Sys Impr	$ 447,814		Currently the 1.0MG Russell Cave pumped storage tank operates with a 1 MGD pump and cannot support the Northern counties HS zone while Muddy Ford is taken out of service for maintenance. It is recommended to install 3 control valves on two 8-inch and one 12-inch main south of the Russell Cave tank, install a pressure reducing valve north of Russell Cave tan and install a flow control valve north of Newtown booster.	Due to concerns with water quality and problems maintaining surrounding pressure during filling operations. Project was approved to review and make improvements to allow for the turn over of the Russell Cave storage tank and improve operations in the northern portion of the distribution system.	$ 749,989	$ 564,634
CS-1201-4	Business Transformation Other	$ 300,972		Process/system enhancements will result in significant redesign of the company's financial (including Sarbanes-Oxley related controls), operational and regulatory controls.	Actual spend was a carryover of the project from 2010. Carryover of project was not budgeted.	$ 784,479	$ 1,000,691
IP-1232-1	Owenton Chemical Bulk Storage/Owenton Post Acquisition Phase 2	$ (83,705)				Project Cancelled	
IP-1201-9	IP Project Unbudgeted Capital	$ (1,091)				Project Cancelled	
		$ 722,796				9,324,971.00	7,986,287.32

Kentucky American Water
Case No. 2018-00358
As of 2010

PSC Data Request 3
Schedule 3

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

Witness Responsible:
Brent O'Neill

Item	Description	Annual Actual	Annual Original Budget				
	BUDGET PROJECTS			**Description**	**Reason**	**Approved by CIM Committee**	**Actual Project Cost**
12020702	KY Major Highway	$ (91,967)	$ -	Relocate approx. 12,000 ft. of existing main on Leestown Road, relocate approx. 8,000 ft. of existing main on Liberty/Todds Road, relocate approx. 11,000 ft. of existing main on KY 922/Newtown Pike, and relocate approx. 12,500 ft. of existing main on US 25/Georgetown Road. It is also recommended to upsize the mains where it is needed to accommodate the proposed Pool 3 WTP and transmission mains.	Actual spend was a carryover of the project from 2009. Carryover of project was not budgeted.	$ 2,408,191	$ 1,593,658
IP-1202-6	Carrick Pike Main Extension	$ 41,893	$ -	Approximately 27,400' of 16" main along Carrick Rd and Stone Rd	Project Cancelled	Project Cancelled	
IP-1202-19	Leestown Road	$ 243,564	$ -	Relocate approx 9,900' of existing main on Leestown Rd, directed by KY Transportation Cabinet	Required by KY Department of Transportation	$ 1,823,761	$ 2,058,699
IP-1202-32	Lexington Operations Center	$ 2,670,832		Operations Center - Richmond Rd Campus		$ 2,756,632	$ 2,808,876
CS-1201-1	Business Transformation CPS	$ 984	$ -	Process/system enhancements will result in significant redesign of the company's financial (including Sarbanes-Oxley related controls), operational and regulatory controls.	Actual spend was a carryover of the project from 2009. Carryover of project was not budgeted.	$ 784,479	$ 1,000,691
12020201	Leestown Rd Main Improvements	$ (150,955)	$ -	Design and construction of 10,000 ft of 16" water main along Leestown Rd to improve fire flows and increase distribution system reliability. Install an additional 33,000 ft of 16" water main along Leestown Rd.	Project will ensure adequate fire protection and increase distribution system reliability.	$ 166,147	$ 15,192
12020402	KY Major Highway Relocations	$ (36,977)	$ -	Relocate mains in conflict with KY DOT road realignment	Required by KY Department of Transportation	$ 2,998,150	$ 3,226,921
		$ -	$ -			10,937,360.00	10,704,036.10
		2,677,375	0				

Kentucky American Water
Case No. 2018-00358
As of 2009

PSC Data Request 3
Schedule 3

Type of Filing: _X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

Witness Responsible:
Brent O'Neill

Item	Description	Annual Actual	Annual Original Budget	Description	Reason	Approved by CIM Committee	Actual Project Cost
	BUDGET PROJECTS						
02-02	2002 MAJOR HIGHWAY RELOCATIONS	$ 19,206	$ -	Various highway relocations (Paris Pk, Reynolds Rd, Richmond Rd, Harrodsburg Rd) at the direction of the KY DOT	Actual spend was a carryover of the project from 2008. Carryover of project was not budgeted. Required by KY Department of Transportation	$ 2,650,000	$ 3,635,145
03-02	MAJOR HIGHWAY RELOCATIONS	$ 267,429	$ -	Various highway relocations (Wellington Wy, Reynolds Rd, Louden Ave, Harrodsburg Rd) at the direction of the KY DOT	Required by KY Department of Transportation	$ 700,000	$ 975,887
06-02	YARNALLTON ROAD MAIN EXTENSION	$ (1,929)	$ -	Construction of approximately 4,655 LF of 8-inch DI main along a portion of Yarnallton Road and Kearney Road to tie in two dead end mains, thus improving water quality in the system.	Actual spend was a carryover of the project from 2008. Carryover of project was not budgeted. Improve water quality for Yarnallton Rd & Kearney Rd areas	$ 497,727	$ 442,281
12020702	MAJOR HIGHWAY RELOCATIONS 2007	$ (23,290)	$ -	Relocate approx. 12,000 ft. of existing main on Leestown Road, relocate approx. 8,000 ft. of existing main on Liberty/Todds Road, relocate approx. 11,000 ft. of existing main on KY 922/Newtown Pike, and relocate approx. 12,500 ft. of existing main on US 25/Georgetown Road. It is also recommended to upsize the mains where it is needed to accommodate the proposed Pool 3 WTP and transmission mains.	Actual spend was a carryover of the project from 2008. Carryover of project was not budgeted. Required by KY Department of Transportation	$ 2,408,191	$ 1,593,658
		$ 261,416				$ 6,255,918	$ 6,646,971

Kentucky American Water
Case No. 2018-00358
As of 2008

PSC Data Request 3
Schedule 3

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

Witness Responsible:
Brent O'Neill

Item	Description	Annual Actual	Annual Original Budget	Description	Reason	Approved by CIM Committee	Actual Project Cost
	BUDGET PROJECTS						
02-02	2002 MAJOR HIGHWAY RELOCATIONS	$ 40	$ -	Various highway relocations (Paris Pk, Reynolds Rd, Richmond Rd, Harrodsburg Rd) at the direction of the KY DOT	Actual spend was a carryover of the project from 2007. Carryover of project was not budgeted. Required by KY Department of Transportation	$ 2,650,000	$ 3,635,145
03-01	ELEVATED STORAGE TANK - 2.0 MG	$ (31)	$ -	Design and construct a two (2) million gallon elevated storage tank in the eastern Fayette County section of the distribution system to provide fire flows and system reliability, and to equalize demands within the system.	Actual spend was a carryover of the project from 2007. Carryover of project was not budgeted.	$ 3,000,000	$ 3,757,947
03-03	ELECTRICAL & RELIABILITY IMPROVEMENTS	$ 337	$ -	Design and coordinate electrical reliability improvements at Kentucky River Station	Actual spend was a carryover of the project from 2007. Carryover of project was not budgeted.	$ 1,315,985	$ 1,024,969
04-03	OWEN COUNTY MAIN EXTENSIONS (343)	$ 316,963	$ -	Install 25,000 feet of 8-, 6- and 4-inch mains in Owen County	Actual spend was a carryover of the project from 2007. Carryover of project was not budgeted.	$ 2,149,998	$ 2,296,507
05-02	RUSSELL CAVE ROAD MAIN - 34,000' OF 12" (343)	$ (196)	$ -	Approximately 30,000 linear feet of 12-inch main is necessary to install to the south and east of the Russell Cave Rd Tank in order to maximize the use of the tank and stabilize pressures in the northern parts of the Central Distribution system.	Actual spend was a carryover of the project from 2007. Carryover of project was not budgeted. Maximize use of Russell Cave storage tank and stabilize pressure in the northern section of the Central Division distribution system	$ 1,324,851	$ 1,326,034
05-05	REPLACE TRAC-VAC SYSTEM AT RRS (332)	$ 96,037	$ -	The design of the improvement or replacement of the TracVac system as well as the downstream residuals handling. This project is necessary to improve the plant's ability to treat river water.	Actual spend was a carryover of the project from 2007. Carryover of project was not budgeted.	$ 1,149,197	$ 1,276,263
06-01	VALVE HOUSE UPGRADES AT KRS	$ (38,142)	$ -	This task order covers cost to design the upgrades to the KRS valve houses	Actual spend was a carryover of the project from 2007. Carryover of project was not budgeted.	$ 380,777	$ 433,037
06-02	YARNALLTON ROAD MAIN EXTENSION	$ 414,412	$ -	Construction of approximately 4,655 LF of 8-inch DI main along a portion of Yarnallton Road and Kearney Road to tie in two dead end mains, thus improving water quality in the system.	Improve water quality for Yarnallton Rd & Kearney Rd areas	$ 497,727	$ 442,281
06-04	OWEN COUNTY SCADA SYSTEM	$ 3,005	$ -	This task order covers cost to design and install a SCADA system for KAW's Northern Division in Owen County	Actual spend was a carryover of the project from 2007. Carryover of project was not budgeted.	$ 574,097	$ 617,582
06-05	MALLARD POINT PRESSURE	$ 270	$ -	This task order is for the design of the Mallard Point Pressure Improvement project.	Actual spend was a carryover of the project from 2007. Carryover of project was not budgeted.	$ 339,396	$ 322,809
06-06	PARKER'S MILL PUMP & DIESEL	$ (394)	$ -	Design for the replacement of one pump and the installation of a second pump along with switchgear equipment, diesel generator, and appropriate SCADA equipment for the Parkers Mill Road Tank.	Actual spend was a carryover of the project from 2007. Carryover of project was not budgeted.	$ 774,258	$ 806,739
12020702	MAJOR HIGHWAY RELOCATIONS 2007	$ (102,688)	$ -	Relocate approx. 12,000 ft. of existing main on Leestown Road, relocate approx. 8,000 ft. of existing main on Liberty/Todds Road, and relocate approx. 11,000 ft. of existing main on KY 922/Newtown Pike, and relocate approx. 12,500 ft. of existing main on US 25/Georgetown Road. It is also recommended to upsize the mains where it is needed to accommodate the proposed Pool 3 WTP and transmission mains.	Actual spend was a carryover of the project from 2007. Carryover of project was not budgeted.	$ 2,408,191	$ 1,593,658
1202-6	CARRICK ROAD MAIN EXTENSION	$ 62,506	$ -	Approximately 27,400' of 16" main along Carrick Rd and Stone Rd	Project cancelled	Project cancelled	
12320507	CHEMICAL FEED IMPROVEMENTS	$ (37,670)	$ -	The design of the post acquisition improvements to the Owenton WTP. Also included is the installation of a venturi meter for NRW computation and ultimate chemical feed control.	Actual spend was a carryover of the project from 2007. Carryover of project was not budgeted.	$ 459,822	$ 452,616
		$ 714,448				17,024,299.00	17,985,586.84

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

4. Confirm that the construction projects approved by the CIMC, but not included in Kentucky-American's original construction budgets, are included in Kentucky-American's Comprehensive Planning Study. If this cannot be confirmed, provide a detailed explanation as to why each project was not included in Kentucky-American's Comprehensive Planning Study.

Response:

Within any given year or Capital Plan there are several projects that are included that are not part of a Comprehensive Planning Study (CPS). It is expected that Kentucky American may encounter additional capital expenditures beyond those identified in the Comprehensive Planning Study. These emerging capital expenditures will occur over time due to normal aging and operational wear on existing equipment that may result in failure or may hinder the ability for a facility to operate effectively. Emerging capital expenditures may also be needed to address operational issues that arise between CPS cycles that need to be addressed to maintain regulatory compliance or regulatory limits. Community driven events that cause conflicts or require additional services can also occur between CPS cycles.

The project or capital investment needs that arise between CPS cycles are evaluated to the same degree as a CPS project prior to being considered in a Capital Plan or approved by the CIMC.

The response to PSC 3-3 provides reasons for projects that were not part of the Capital Plan and for most cases were not included in Comprehensive Planning Studies due to the emerging needs of the projects. Several of these projects were significant relocations as a result of road widening or improvement projects related to Kentucky Department of Transportation Projects. Several other projects emerged due to failure or concerns that equipment would jeopardize the ability of treatment facilities to operate effectively. Several more resulted from emerging needs to address the ability of the Company to meet regulatory limits and maintain regulatory compliance.

Between the development a CPS and after the review and approval of the yearly plan, unexpected changes occur due to failures, outside influences, or recognition of unfavorable trends, that occur and affect the Company's infrastructure and its ability to serve the customer. The overall management of the Capital Plan along with CIMC involvement ensure that the goals and strategy of the Company are maintained and that emerging projects are in the best interest of the customer.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

5. Refer to Kentucky-American's Response to Staff's Second Request, Item 4.a. Provide the Information requested in the schedule below for the calendar years 2008 through 2017.

Item	Budget Projects	Actual Project Cost	Cost Approved by CIMC	Variance in Dollars	Variance Percentage

Response:

Please see attached that refers to Staff's Second Request, Item 4.a. to create the schedule as requested.

Kentucky American Water
Case No. 2018-00358
As of 2017

PSC Data Request 3
Schedule 5

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

Witness Responsible:
Brent O'Neill

Item	BUDGET PROJECTS	Actual Project Cost	Cost Approved by CIMC	Variance in Dollars	Variance Percentage
I12-020017	KRS Valve House Rehabilitation Phase 1	$ 1,307,199	$ 1,654,085	$ (346,886)	-20.97%
I12-020035	KRS1 - Residual Improvements	$ 639,371	$ 4,500,000	$ (3,860,629)	-85.79%
I12-020040	KRS Valve House Rehabilitation (Phase 2)	$ 900,544	$ 800,000	$ 100,544	12.57%
I12-020043	Athens Boonesboro Main Extension	$ 2,621,360	$ 2,450,000	$ 171,360	6.99%
I12-020055	New Circle Rd Main Relocation Phase 2	$ 187,842	$ 1,000,000	$ (812,158)	-81.22%
I12-020067	RRS Chemical Facility	$ 1,418,528	$ 10,000,000	$ (8,581,472)	-85.81%
I12-020073	KRS1 Raw Water Intake Pump Replacement	$ 792,413	$ 761,700	$ 30,713	4.03%
I12-020076	KRS1 - Replace Incline Car	$ 547,079	$ 1,450,000	$ (902,921)	-62.27%
I12-020077	Millersburg - GAC Filter	$ 798,790	$ 620,000	$ 178,790	28.84%
I12- 020079	Jacobson Pump Station	$ 166,003	$ 948,409	$ (782,406)	-82.50%
I12-020086	RRS WTP Sedimentation Basin Improvement	$ 1,479,554	$ 1,375,000	$ 104,554	7.60%
I12-020090	Brannon Rd Main Relocation	$ 83,645	$ 1,550,000	$ (1,466,355)	-94.60%
		$ 10,942,326	$ 27,109,194	$ (16,166,868)	-59.64%

Note: Several projects in 2017 list are multiple year projects and only partial spend has occurred.

Kentucky American Water
Case No. 2018-00358
As of 2016

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

PSC Data Request 3
Schedule 5

Witness Responsible:
Brent O'Neill

Item	BUDGET PROJECTS	Actual Project Cost	Cost Approved by CIMC	Variance in Dollars	Variance Percentage
I12-020011	New Circle Rd Main Relocation	$ 2,195,618	$ 2,837,872	$ (642,254)	-22.63%
I12-020012	KRS High Service Pump #15	$ 1,254,840	$ 1,400,000	$ (145,160)	-10.37%
I12-020017	KRS Valve House Rehabilitation #1	$ 1,307,199	$ 1,654,085	$ (346,886)	-20.97%
I12-020033	KY 341 Interconnect	$ 1,303,436	$ 1,907,426	$ (603,990)	-31.67%
I12-020046	KRS I Raw Water Intake Actuator Repl	$ 706,099	$ 689,982	$ 16,117	2.34%
I12-020056	KRS Valve House Rehabilitation (Phase 1.B)	$ 867,228	$ 1,500,000	$ (632,772)	-42.18%
I12-020057	Sludge Thickener Drive Upgrade	$ 306,195	$ 468,000	$ (161,805)	-34.57%
I12-020058	KRS2 Intake Pump Replacement	$ 1,590,490	$ 1,243,624	$ 346,866	27.89%
I12-020060	Reeves Drive	$ 584,741	$ 580,000	$ 4,741	0.82%
I12-020062	Deer Lake Main Extension	$ 1,120,858	$ 1,026,130	$ 94,728	9.23%
I12-300007	Pete Towles Main Extension	$ 1,167,656	$ 1,055,750	$ 111,906	10.60%
I12-020065	KRSI - Cedar Creek Rd	$ 282,978	$ 340,000	$ (57,022)	-16.77%
I12-020073	KRS1 Raw Water Intake Pump Replacement	$ 792,413	$ 761,700	$ 30,713	4.03%
I12-020074	Athens Boonesboro Main Extension - Phase II	$ 1,590,878	$ 1,750,000	$ (159,122)	-9.09%
I12-020075	Richmond Rd Campus - Road Improvements	$ 510,088	$ 650,000	$ (139,912)	-21.52%
I12-020076	KRS1 - Replace Incline Car	$ 547,079	$ 1,450,000	$ (902,921)	-62.27%
I12-020077	Millersburg GAC Filter	$ 798,790	$ 621,780	$ 177,010	28.47%
I12-300009	Freshwater Source - KRS2 & Low Srvc Pump	$ 507,433	$ 486,294	$ 21,139	4.35%
		$ 17,434,019	$ 20,422,643	$ (2,988,624)	-14.63%

Kentucky American Water
Case No. 2018-00358
As of 2015

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

PSC Data Request 3
Schedule 5

Witness Responsible:
Brent O'Neill

Item	BUDGET PROJECTS	Actual Project Cost	Cost Approved by CIMC	Variance in Dollars	Variance Percentage
I12-020010	Leestown Road	$ 2,058,699	$ 2,181,774	$ (123,075)	-5.64%
I12-020012	KRS High Service Pumps	$ 1,254,840	$ 1,400,000	$ (145,160)	-10.37%
I12-020017	KRS Valve House Rehabilitation	$ 1,307,199	$ 1,654,085	$ (346,886)	-20.97%
I12-020056	KRS Valve House 2	$ 867,227	$ 1,500,000	$ (632,773)	-42.18%
I12-020045	Main Office Roof Replacement	$ 393,807	$ 405,875	$ (12,069)	-2.97%
I12-020046	KRS I Raw Water Intake Actuator Repl	$ 706,099	$ 689,982	$ 16,117	2.34%
I12-020047	Field Ops Road Replacement	$ 352,752	$ 327,458	$ 25,294	7.72%
I12-020048	Security Upgrades Richmond Rd Campus	$ 459,754	$ 429,450	$ 30,304	7.06%
I12-020057	Sludge Thickener Drive Upgrade	$ 306,195	$ 468,000	$ (161,805)	-34.57%
I12 -020058	KRS2 Intake Pump Replacement	$ 1,590,490	$ 1,243,624	$ 346,866	27.89%
I12-020059	KRS2 Transfer Switch	$ 67,561	$ 1,007,467	$ (939,906)	-93.29%
I12-020060	KRS Reeves Drive	$ 584,741	$ 580,000	$ 4,741	0.82%
I12-300003	Northern Division Connection	$ 15,308,044	$ 14,358,853	$ 949,191	6.61%
		$ 25,257,409	$ 26,246,569	$ (989,159)	-3.77%

Kentucky American Water
Case No. 2018-00358
As of 2014

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

PSC Data Request 3
Schedule 5

Witness Responsible:
Brent O'Neill

Item	BUDGET PROJECTS	Actual Project Cost	Cost Approved by CIMC	Variance in Dollars	Variance Percentage
I12-020001	WTP for Pool 3	$ 164,195,640	$ 162,297,120	$ 1,898,520	1.17%
I12-020025	Pump Efficiency Repl Phase 1	$ 3,559,485	$ 3,545,584	$ 13,901	0.39%
I12-020027	Russell Cave Rd	$ 564,634	$ 749,989	$ (185,355)	-24.71%
I12-020045	Main Office Roof Replacement	$ 393,807	$ 405,875	$ (12,069)	-2.97%
I12-020046	KRS I Raw Water Intake Actuator Repl	$ 706,099	$ 689,982	$ 16,117	2.34%
I12-020047	Field Ops Road Replacement	$ 352,752	$ 327,458	$ 25,294	7.72%
I12-020048	Security Upgrades Richmond Rd Campus	$ 459,754	$ 429,450	$ 30,304	7.06%
		$ 170,232,171	$ 168,445,458	$ 1,786,713	1.06%

Kentucky American Water
Case No. 2018-00358
As of 2013

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

PSC Data Request 3
Schedule 5

Witness Responsible:
Brent O'Neill

Item	BUDGET PROJECTS	Actual Project Cost	Cost Approved by CIMC	Variance in Dollars	Variance Percentage
I12-020001	New WTP On Pool 3 of Kentucky	$ 164,195,640	$ 162,297,120	$ 1,898,520	1.17%
I12-020009	US 25 Relocation - Item 7-122.50	$ 1,079,811	$ 1,147,026	$ (67,215)	-5.86%
I12-020010	Leestown Road - Item 7-223.00	$ 2,058,699	$ 1,823,761	$ 234,938	12.88%
I12-020027	Russell Cave Rd Sys Improvements	$ 564,634	$ 749,989	$ (185,355)	-24.71%
I12-020032	RRS Filter Building Replacement	$ 15,207,755	$ 15,609,446	$ (401,691)	-2.57%
I12-020033	KY 341 Interconnect	$ 1,303,436	$ 1,907,426	$ (603,990)	-31.67%
I12-020034	RRS Chlorine Scrubber	$ 311,705	$ 450,000	$ (138,295)	-30.73%
		$ 184,721,680	$ 183,984,768	$ 736,912	0.40%

Kentucky American Water
Case No. 2018-00358
As of 2012

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

PSC Data Request 3
Schedule 5

Witness Responsible:
Brent O'Neill

Item	BUDGET PROJECTS	Actual Project Cost	Cost Approved by CIMC	Variance in Dollars	Variance Percentage
I12-020001	New WTP On Pool 3 of Kentucky	$ 164,195,640	$ 162,297,120	$ 1,898,520	1.17%
I12-020027	Russell Cave Road Sys Impr	$ 564,634	$ 749,989	$ (185,355)	-24.71%
IP-1232-3	Northern Division Connection	$ 15,308,044	$ 14,104,868	$ 1,203,176	8.53%
CS-1201-1	Business Transformation CPS	$ 212,040	$ 249,865	$ (37,825)	-15.14%
		$ 180,280,358	$ 177,401,842	$ 2,878,516	1.62%

Kentucky American Water
Case No. 2018-00358
As of 2011

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

PSC Data Request 3
Schedule 5

Witness Responsible:
Brent O'Neill

Item	BUDGET PROJECTS	Actual Project Cost	Cost Approved by CIMC	Variance in Dollars	Variance Percentage
12020204	Source of Supply Project Dev	$ 2,749	$ 1,364,872	$ (1,362,123)	-99.80%
IP-1202-5	North Broadway Main Replacement	$ 3,059,378	$ 3,136,145	$ (76,767)	-2.45%
IP-1202-17	South Limestone Replacement	$ 549,959	$ 532,854	$ 17,105	3.21%
IP-1202-32	Lexington Operations Center	$ 2,808,876	$ 2,756,632	$ 52,244	1.90%
IP-1202-38	Russell Cave Road Sys Impr	$ 564,634	$ 749,989	$ (185,355)	-24.71%
CS-1201-4	Business Transformation Other	$ 1,000,691	$ 784,479	$ 216,212	27.56%
		$ 7,986,287	$ 9,324,971	$ (1,338,684)	85.64%

Kentucky American Water
Case No. 2018-00358
As of 2010

PSC Data Request 3
Schedule 5

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

Witness Responsible:
Brent O'Neill

Item	BUDGET PROJECTS	Actual Project Cost	Cost Approved by CIMC	Variance in Dollars	Variance Percentage
12020702	KY Major Highway	$ 1,593,658	$ 2,408,191	$ (814,533)	-33.82%
IP-1202-19	Leestown Road	$ 2,058,699	$ 1,823,761	$ 234,938	12.88%
IP-1202-32	Lexington Operations Center	$ 2,808,876	$ 2,756,632	$ 52,244	1.90%
CS-1201-1	Business Transformation CPS	$ 1,000,691	$ 784,479	$ 216,212	27.56%
12020201	Leestown Rd Main Improvements	$ 15,192	$ 166,147	$ (150,955)	-90.86%
12020402	KY Major Highway Relocations	$ 3,226,921	$ 2,998,150	$ 228,771	7.63%
		10,704,036.10	10,937,360.00	(233,323.90)	97.87%

Kentucky American Water
Case No. 2018-00358
As of 2009

PSC Data Request 3
Schedule 5

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

Witness Responsible:
Brent O'Neill

Item	BUDGET PROJECTS	Actual Project Cost	Cost Approved by CIMC	Variance in Dollars	Variance Percentage
02-02	2002 MAJOR HIGHWAY RELOCATIONS	$ 3,635,145	$ 2,650,000	$ 985,145	37.18%
03-02	MAJOR HIGHWAY RELOCATIONS	$ 975,887	$ 700,000	$ 275,887	39.41%
06-02	YARNALLTON ROAD MAIN EXTENSION	$ 442,281	$ 497,727	$ (55,446)	-11.14%
12020702	MAJOR HIGHWAY RELOCATIONS 2007	$ 1,593,658	$ 2,408,191	$ (814,533)	-33.82%
		$ 6,646,971	$ 6,255,918	$ 391,053	6.25%

Kentucky American Water
Case No. 2018-00358
As of 2008

PSC Data Request 3
Schedule 5

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

Witness Responsible:
Brent O'Neill

Item	BUDGET PROJECTS	Actual Project Cost	Cost Approved by CIMC	Variance in Dollars	Variance Percentage
02-02	2002 MAJOR HIGHWAY RELOCATIONS	$ 3,635,145	$ 2,650,000	$ 985,145	37.18%
03-01	ELEVATED STORAGE TANK - 2.0 MG	$ 3,757,947	$ 3,000,000	$ 757,947	25.26%
03-03	ELECTRICAL & RELIABILITY IMPROVEMENTS	$ 1,024,969	$ 1,315,985	$ (291,016)	-22.11%
04-03	OWEN COUNTY MAIN EXTENSIONS (343)	$ 2,296,507	$ 2,149,998	$ 146,509	6.81%
05-02	RUSSELL CAVE ROAD MAIN - 34,000' OF 12" (343)	$ 1,326,034	$ 1,324,851	$ 1,183	0.09%
05-05	REPLACE TRAC-VAC SYSTEM AT RRS (332)	$ 1,276,263	$ 1,149,197	$ 127,066	11.06%
06-01	VALVE HOUSE UPGRADES AT KRS	$ 433,037	$ 380,777	$ 52,260	13.72%
06-02	YARNALLTON ROAD MAIN EXTENSION	$ 442,281	$ 497,727	$ (55,446)	-11.14%
06-04	OWEN COUNTY SCADA SYSTEM	$ 617,582	$ 574,097	$ 43,485	7.57%
06-05	MALLARD POINT PRESSURE	$ 322,809	$ 339,396	$ (16,587)	-4.89%
06-06	PARKER'S MILL PUMP & DIESEL	$ 806,739	$ 774,258	$ 32,481	4.20%
12020702	MAJOR HIGHWAY RELOCATIONS 2007	$ 1,593,658	$ 2,408,191	$ (814,533)	-33.82%
12320507	CHEMICAL FEED IMPROVEMENTS	$ 452,616	$ 459,822	$ (7,206)	-1.57%
		17,985,586.84	17,024,299.00	961,287.84	5.65%

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

6. Provide a schedule that calculates the ten-year average slippage factor for the CIMC construction budgets for calendar years 2008 through 2017.

Response:

Attached please find the ten-year average slippage factor for the CIMC construction budgets for calendar years 2008 to 2017 as provided in Schedule 5 of Staff's Third Request Item 5.

Kentucky American Water
Case No. 2018-00358

PSC Data Request 3
Schedule 6

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

Witness Responsible:
Brent O'Neill

Source: PSC_DR3_Schedule 5

Year	Actual Project Cost	Cost Approved by CIMC	Variance in Dollars	Variance as Percent	Slippage Factor
2008	$ 17,985,586.84	$ 17,024,299.00	$ 961,287.84	5.65%	105.647%
2009	$ 6,646,971.48	$ 6,255,918.00	$ 391,053.48	6.25%	106.251%
2010	$ 10,704,036.10	$ 10,937,360.00	$ (233,323.90)	-2.13%	97.867%
2011	$ 7,986,287.32	$ 9,324,971.00	$ (1,338,683.68)	-14.36%	85.644%
2012	$ 180,280,357.60	$ 177,401,842.00	$ 2,878,515.60	1.62%	101.623%
2013	$ 184,721,680.00	$ 183,984,768.00	$ 736,912.00	0.40%	100.401%
2014	$ 170,232,171.02	$ 168,445,458.21	$ 1,786,712.81	1.06%	101.061%
2015	$ 25,257,409.25	$ 26,246,568.64	$ (989,159.39)	-3.77%	96.231%
2016	$ 17,434,019.25	$ 20,422,643.29	$ (2,988,624.04)	-14.63%	85.366%
2017	$ 10,942,326.22	$ 27,109,194.00	$ (16,166,867.78)	-59.64%	40.364%
Totals	$ 632,190,845.08	$ 647,153,022.14	$ (14,962,177.06)	-2.31%	97.688%

The Annual Actual Cost, Annual Original Budget, Variance in Dollars, and Variance as Percent are to be taken from Schedule 5 for Public Service Commission DR3.

The Slippage Factor is calculated by dividing the Annual Actual Cost by the Annual Original Budget. Calculate a Slippage Factor for each year and the Totals line. Carry Slippage Factor percentages to 3 decimal places.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

7. Describe the process for funding approval of Kentucky-American's construction budgets, including the process for revised funding approval to include construction projects approved by the CIMC but not included in original construction budgets.

Response:

Each year KAWC develops a Capital Business Plan of specific capital needs which focuses on the upcoming year and extends into outer years. The Engineering group works with the Vice President Operations, Operations Superintendents and Operations Supervisors to develop the Business Plan before submitting the plan for approval.

Approval of the Business Plan does not constitute approval of individual capital projects, which were included in the development of the Business Plan. Instead, approval of the Business Plan is an approval of the overall expected capital spend for the year. Once the Business Plan is approved, Engineering and Operations are responsible for delivering the capital program within the overall expected spend of the Capital Plan.

Since the projects are not approved with the Capital Business Plan, each project is approved through the Capital Investment Management Committee ("CIMC") for each stage of design and construction.

For a capital project to be approved for design and construction, the project is submitted to the CIMC. The CIMC ensures capital expenditure plans meet the strategic intent of the business, which includes safety and regulatory compliance and the introduction of new technologies to drive efficiencies. In turn, this ensures that capital expenditure plans are integrated with operating expense plans, and provides more effective controls on budgets and individual capital projects. The CIMC includes the KAWC President, KAWC Vice President of Operations, KAWC Director of Engineering and KAWC Financial Lead.

During any given year, unexpected changes in priorities may occur due to outside influences, or recognition of unfavorable trends, that are occurring and affect the infrastructure or ability to serve the customer. In these cases, a previously unbudgeted new priority project is initiated to address the need or an existing project effort is increased or decreased. Since these changes were not identified during the original budgeting process, an offset to the new project's expected cost is required to ensure that the overall company budget is maintained. As a result, projects that were originally identified within the budget are changed or delayed to make room for the new, unexpected projects or a change in an existing project.

The management of the capital spend is carried out during monthly CIMC meetings that compare the current capital expenditures to the budged levels. If changes in the budgets are required due to changes in priorities or unexpected changes in projects, the CIMC reviews the need for the changes and approves or disapproves, as the case may be, the movement of available capital from other budget lines to offset the changes in capital spend and maintain the overall projected spend for the year.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

8. Explain whether the CIMC receives an expected project schedule with the estimated construction timeline and the construction costs broken down in monthly or yearly time increments when projects are presented to CIMC for approval. If there is a project schedule with expected time increments, provide the schedule for each project for calendar years 2008 through 2017.

Response:

The CIMC committee is provided with the overall estimated construction cost, the estimated start date, and the estimated completion date for a capital project to be approved for design and construction. Please find attached the schedule for each project for calendar years 2008 through 2017 that provides the estimated start date and the estimated completion date that was provided to the CIMC during approval.

Kentucky American Water
Case No. 2018-00358
Construction Projects

PSC Data Request 3
Schedule 8

Type of Filing:_X__Original _____Updated _____Revised
Workpaper Reference No(s).:_____

Witness Responsible:
Brent O'Neill

Year	Item	Description	Estimated Start Date	Estimated Completion Date
2008	12020701	INCLINE CAR REPLACEMENT AT KRS	Jan-07	Oct-09
2008	12020702	MAJOR HIGHWAY RELOCATIONS 2007	Jan-07	Dec-07
2008	12320507	CHEMICAL FEED IMPROVEMENTS	Dec-05	Nov-06
2008	02-02	2002 MAJOR HIGHWAY RELOCATIONS	Jan-02	Dec-02
2008	02-04	SOURCE OF SUPPLY DEVELOPMENT	Apr-02	Dec-03
2008	03-01	ELEVATED STORAGE TANK - 2.0 MG	May-03	Dec-05
2008	03-03	ELECTRICAL & RELIABILITY IMPROVEMENTS	Jan-03	Jul-04
2008	04-02	MAJOR HIGHWAY RELOCATIONS (343)	Jan-04	Dec-08
2008	04-03	OWEN COUNTY MAIN EXTENSIONS (343)	Oct-04	Dec-07
2008	05-02	RUSSELL CAVE ROAD MAIN - 34,000' OF 12" (343)	Apr-05	Dec-07
2008	05-05	REPLACE TRAC-VAC SYSTEM AT RRS (332)	Apr-05	Dec-06
2008	05-06	SLUDGE HANDLING IMPROVEMENT	Apr-05	Dec-08
2008	05-08	KENTUCKY RELIABILITY IMPROVEMENT	Dec-05	Jul-07
2008	06-01	VALVE HOUSE UPGRADES AT KRS	Jan-06	Dec- 06
2008	06-02	YARNALLTON ROAD MAIN EXTENSION	Mar-06	Sep-07
2008	06-04	OWEN COUNTY SCADA SYSTEM	Feb-06	Dec-06
2008	06-05	MALLARD POINT PRESSURE	Jan-06	Nov-06
2008	06-06	PARKER'S MILL PUMP & DIESEL	Feb-06	Dec-06
2008	06-13	HIGHWAY RELOCATION - CLAYS MILL	Jan-06	Apr-07
2008	1202-5	NORTH BROADWAY MAIN REPLACEMENT	Dec-07	Jun-09
2008	1202-6	CARRICK ROAD MAIN EXTENSION	May-08	May-09
2008	1232-1	OWENTON CHEMICAL BULK STORAGE	Apr -08	Jan-09
2009	03-02	MAJOR HIGHWAY RELOCATIONS	Jan-03	Dec-03
2009	05-01	GROUND STORAGE TANK	Jul-05	Dec-07
2009	CS-1201-1	BUSINESS TRANSFORMATION	Jan-09	Dec-09
2010	12020201	Leestown Rd Main Improvements	Apr-02	Dec-03
2010	12020204	Source of Supply Project Dev	Apr-02	Dec-03
2010	12020402	KY Major Highway Relocations	Jan-04	Dec-10
2010	12020702	KY Major Highway	Jan-07	Dec-10
2010	CS-1201-1	Business Transformation CPS	Jan-09	Dec-09
2010	CS-1201-3	Business Transformation CPS	Jan-10	Dec-14
2010	IP-1201-10	Unallocated Eng Clearing	Jan-10	Dec-10
2010	IP-1202-17	South Limestone Replacement	May-09	Jul-09
2010	IP-1202-18	US 25 Relocation	Feb-10	Oct-10
2010	IP-1202-19	Leestown Road	Apr-11	Oct-11
2010	IP-1202-31	KRS Raw Water Access	Nov-10	Sep-11
2010	IP-1202-32	Lexington Operations Center	Mar-10	Dec-10
2010	IP-1202-5	NORTH BROADWAY MAIN REPLACEMENT	Dec-07	Jun-09
2010	IP- 1202-6	Carrick Pike Main Extension	May-08	May-09
2011	CS-1201-3	BUSINESS TRANSFORMATION	Jan-10	Dec-14
2011	CS-1201-4	Business Transformation Other	Sep-11	Dec-14
2011	IP-1202-21	KRS High Service Pumping	Oct-11	Sep-12
2011	IP-1202-31	KRS Raw Water Access	Aug-11	Dec-11
2011	IP-1202-38	Russell Cave Road Sys Impr	Oct-11	Jul-12
2011	IP-1232-1	Owenton Chemical Bulk Storage/Owenton Post Acquisition Phase 2	Jan-08	Dec-13
2011	IP-1232-3	Northern Division Connection	Feb-11	Dec-13
2011	IP-1233-1	Owenton WWTP Phosphorous	Apr-11	Jul-11

2012	CS-1201-1	Business Transformation CPS	Apr-11	Jul-11
2012	I12-0020009	US 25 Relocation	Feb-10	Oct-10
2012	I12-0200010	Leestown Road	Jan-10	Dec-14
2012	I12-020025	Pump Efficiency Replacement Phase 1	Aug-11	Feb-14
2012	I12-020027	Russell Cave Road Sys Impr	Oct-11	Dec-12
2012	I12-300003	Northern Division Connection	Feb-11	Feb-14
2012	IP-1202-37	Pump Efficiency Replacement Phase 2	Mar-10	Oct-13
2012	IP-1202-9	Todds and Cleveland Rd Main Ext	Jan-10	Dec-11
2012	IP-1232-3	Northern Division Connection	Feb-11	Dec-13
2012	T12-0102-P	BUSINESS TRANSFORMATION	Jan-10	Dec-14
2012	T12-0103-P	Business Transformation Other	Sep-11	Dec-14
2013	I12-020009	US 25 Relocation - Item 7-122.50	Feb-10	Oct-10
2013	I12-020010	Leestown Road - Item 7-223.00	Jan-10	Dec-14
2013	I12-020025	Pump Efficiency Repl Phase 1	Jan-12	Dec-14
2013	I12-020026	Pump Efficiency Repl Phase 2	Aug-11	Dec-11
2013	I12-020027	Russell Cave Rd Sys Improvements	Oct-11	Jul-12
2013	I12-020032	RRS Filter Building Replacement	Jan-13	Dec-16
2013	I12-020033	KY 341 Interconnect	Jan-13	Dec-14
2013	I12-020034	RRS Chlorine Scrubber	Apr-13	Dec-13
2013	T12-0102	BUSINESS TRANSFORMATION	Jan-10	Dec-14
2013	T12-0103	Business Transformation Other	Sep-11	Dec-14
2014	I12-020007	North Upper St Main Repl	Jan-13	Dec-14
2014	I12-020010	Leestown Road	Jan-10	Dec-14
2014	I12-020011	New Circle Rd Main Relocation	Jan-12	Dec-16
2014	I12-020017	KRS Valve House Rehabilitation	Jan-14	Dec-15
2014	I12-020027	Russell Cave Rd	Jan-11	Dec-13
2014	I12-020036	Storage Tank and System Nitrification	Jan-14	Dec-14
2014	I12-020045	Main Office Roof Replacement	Aug-14	Nov-14
2014	I12-020046	KRS I Raw Water Intake Actuator Repl	Sep-14	Feb-15
2014	I12-020047	Field Ops Road Replacement	Oct-14	Jan-15
2014	I12- 020048	Security Upgrades Richmond Rd Campus	Oct-14	Dec-14
2014	I12-300005	Fairgrounds Tank Area	Jan-14	Jul-14
2015	I12-000001	Acquisitions	Jan-14	Dec-14
2015	I12-020012	KRS High Service Pumps	Jan-16	Dec-17
2015	I12-020040	KRS Valve House Rehabilitation Ph 2	Aug-15	Dec-15
2015	I12-020043	Athens Boonesboro main Extension	Jan-15	Dec-16
2015	I12-020056	KRS Valve House 2	Jun-15	Feb-16
2015	I12-020057	Sludge Thickener Drive Upgrade	Jul-15	Dec-15
2015	I12 -020058	KRS2 Intake Pump Replacement	Aug-15	Apr-16
2015	I12-020059	KRS2 Transfer Switch	Oct-15	Dec-17
2015	I12-020060	KRS Reeves Drive	Oct-15	May-16
2015	T12-0102	BUSINESS TRANSFORMATION	Sep-11	Dec-14
2016	I12-020011	New Circle Rd Main Relocation	Jan-12	Dec-16
2016	I12-020012	KRS High Service Pump #15	Jan-16	Dec-17
2016	I12-020017	KRS Valve House Rehabilitation #1	Jan-14	Dec-15
2016	I12-020021	Power Reliability @ Remote Sites	Nov -16	Dec-17
2016	I12-020037	KRS1 Chemical Storage and Feed Improvements	Oct-16	Dec-18
2016	I12-020040	KRS Valve House Rehabilitation (Phase 2)	Aug-15	Dec-15
2016	I12-020055	New Circle Rd Main Relocation Phase 2	Oct-16	Aug-19
2016	I12-020056	KRS Valve House Rehabilitation (Phase 1.B)	Jun-15	Mar-16
2016	I12-020060	Reeves Drive	Oct-15	May-16
2016	I12-020061	New Millersburg Tank & Pump Station	Jan-16	Aug-17
2016	I12 -020062	Deer Lake Main Extension	Feb-16	Jul-16
2016	I12-020064	KRSI HS Pump #12	Mar-16	Aug-18
2016	I12-020065	KRSI - Cedar Creek Rd	Mar-16	Jun-16
2016	I12-020073	KRS1 Raw Water Intake Pump Replacement	Jul-16	May-17
2016	I12-020074	Athens Boonesboro Main Extension - Phase II	Jun-16	Dec-17
2016	I12-020075	Richmond Rd Campus - Road Improvements	Mar-17	May-17
2016	I12-020076	KRS1 - Replace Incline Car	Oct-16	Dec-17

2016	I12-020077	Millersburg GAC Filter	Nov-16	Jun-17
2016	I12-300007	Pete Towles Main Extension	Mar-16	Oct-16
2016	I12-300009	Freshwater Source - KRS2 & Low Srvc Pump	Sep-16	Dec-16
2017	I12-020017	KRS Valve House Rehabilitation Phase 1	Jan-14	May-15
2017	I12-020021	Jacobson - Hays Booster Station	Nov-16	Dec-17
2017	I12-020035	KRS1 - Residual Improvements	Aug-17	Dec-18
2017	I12-020037	KRS1 Chemical Storage & Feed Improvements	Oct-16	Dec -18
2017	I12-020039	Georgetown Bypass and US 25 Area (Delaplain Booster)	Jan-18	Jul-18
2017	I12-020040	KRS Valve House Rehabilitation (Phase 2)	Aug-15	May-17
2017	I12-020064	KRS 1 HS Pump #12	Mar-16	Aug-18
2017	I12-020067	RRS Chemical Facility	Jul-17	Dec-20
2017	I12-020077	Millersburg - GAC Filter	Nov-16	Jun-17
2017	I12-020079	Jacobson Pump Station	Jun-17	Oct-17
2017	I12-020086	RRS WTP Sedimentation Basin Improvement	Oct -17	Dec-17
2017	I12-020090	Brannon Rd Main Relocation	Mar-17	Dec-17
2017	I12-300008	Owenton Distribution Building	Jan-17	Dec-17

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

9. State when Kentucky-American revised the construction approval process to include the CIMC review and explain the reason for the formation of the CIMC.

Response:

Kentucky American has utilized the CIMC review process since 2003, along with the entire American Water system for the development and review of capital expenditures that has incorporated industry best practices. The primary purpose of this cross-functional meeting is to assess strategic direction of spend, timing, and status of contingencies and reserves of the capital program, and compliance with Company policies and practices. The secondary purpose of the meeting is to approve or re-approve Investment Projects according to the Delegation of Authority Policy and provide review and oversight of Recurring Project Line Items per the Capital Project Delivery Practice and internal controls. The CIMC allows KAWC to maintain a portfolio of projects that may have been identified through Comprehensive Planning, projects that are not typically encompassed within the planning process, or where emerging projects based on a need that arose between planning cycles.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

10. Provide copies of all schedules, supporting calculations, and documentation requested in Items 1, 2, 5, and 6 above in Excel spreadsheet format, with formulas intact and unprotected, and all rows and columns fully accessible.

Response:

Attached please find schedules for Items 1, 2, 5, and 6 of the Staff's Third Request in Excel spreadsheet format.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Brent O' Neill; Melissa L. Schwarzell

11. Refer to Kentucky-American's response to Staff's Second Request, Item 18. State whether Kentucky-American recovered this tax expense through base rates for the period after the Commission's ruling in Administrative Case No. 313[1] and prior to the enactment of the Small Business Jobs Protection Act of 1996.

Response:

The Company has pursued an answer to this question by trying to assess if tax costs were being recovered through gross up of contributions and advances during this time period. The Company's efforts to find robust records of tax gross up (or lack thereof) on contributions during the 1987 to 1996 time period have not yet been successful. That said, at least one record of a customer advance received in the early 1990s shows that no gross up was being charged.

Additionally, the Company did find a tariff that was effective for a brief time, from November 1, 1990 to October 31, 1991, to "Recoup Taxes Refunded Per Administrative Case No. 313". It may be reasonable to deduce that this tariff was put in place to ensure that Case No. 313 had been properly accounted for. This tariff is Original Sheet No. 60, which is the last page in the attached document. It is also retrievable at:

https://psc.ky.gov/tariffs/Water/Districts,%20Associations,%20&%20Privately%20Owned/Kentucky-American%20Water%20Company/Cancelled%20Tariff%20Pages/1991%20Cancelled%20Tariff%20Pages.pdf

[1] Administrative Case No. 313, *The Effects of the Tax Reform Act of 1986 on Contributions in Aid of Construction and Customer Advance*, Interim Order (Ky. PSC Apr. 15, 1988).

P.S.C. Ky. No. 6;
Cover Sheet and Original Sheets;
Nos. 1, 2, 4 through 21, 24, 25, 26, 28;
through 49, 51, 54, 56, 57 and 58;
First Revised Sheet Nos. 22, 23 and 27;
Second Revised Sheet No. 3
Thirteenth Revised Sheet No. 52;
Eleventh Revised Sheet No. 53; and
Fourteenth Revised Sheet No. 50

KENTUCKY-AMERICAN WATER COMPANY

OF

2300 RICHMOND ROAD, LEXINGTON, KENTUCKY

RATES FOR FURNISHING WATER

AT

CITY OF LEXINGTON, AND FAYETTE COUNTY, KENTUCKY AND
CONTIGUOUS TERRITORY THERETO

AND

RULES AND REGULATIONS FOR FURNISHING WATER

AT

CITY OF LEXINGTON, AND FAYETTE COUNTY, KENTUCKY
AND CONTIGUOUS TERRITORY THERETO

FILED WITH THE PUBLIC SERVICE COMMISSION OF KENTUCKY

ISSUED: June 25, 1991 EFFECTIVE: May 30, 1991

Issued By: R. A. Edens, R. A. Edens, Vice President
2300 Richmond Road, Lexington, Kentucky

PUBLIC SERVICE COMMISSION
OF KENTUCKY
EFFECTIVE

MAY 30 1991

PURSUANT TO 807 KAR 5:011,
SECTION 9 (1)
BY: Stephen Miller
PUBLIC SERVICE COMMISSION MANAGER

C-91

P.S.C. Ky. No. 6;
Cover Sheet and Original Sheets;
Nos. 1, 2, 4 through 21, 24, 25, 26, 28;
through 49, 51, 54, 56, 57 and 58;
First Revised Sheet Nos. 22, 23 and 27;
Second Revised Sheet No. 3
Twelfth Revised Sheet No. 52;
Tenth Revised Sheet No. 53; and
Thirteenth Revised Sheet No. 50

KENTUCKY-AMERICAN WATER COMPANY

OF

2300 RICHMOND ROAD, LEXINGTON, KENTUCKY

RATES FOR FURNISHING WATER

AT

CITY OF LEXINGTON, AND FAYETTE COUNTY, KENTUCKY AND
CONTIGUOUS TERRITORY THERETO

AND

RULES AND REGULATIONS FOR FURNISHING WATER

AT

CITY OF LEXINGTON, AND FAYETTE COUNTY, KENTUCKY
AND CONTIGUOUS TERRITORY THERETO

FILED WITH THE PUBLIC SERVICE COMMISSION OF KENTUCKY

ISSUED: July 3, 1990 EFFECTIVE: June 28, 1990

Issued By: R. A. Edens, R. A. Edens, Vice President
2300 Richmond Road, Lexington, Kentucky

PUBLIC SERVICE COMMISSION
OF KENTUCKY
EFFECTIVE

JUN 2 8 1990

PURSUANT TO 807 KAR 5:011,
SECTION 9 (1)
BY: George Allen
PUBLIC SERVICE COMMISSION MANAGER

C 7-91

KENTUCKY-AMERICAN WATER COMPANY

P.S.C. No. 6
Thirteenth Revised Sheet No. 50
Cancelling Twelfth Revised Sheet No. 50

CLASSIFICATION OF SERVICE
SERVICE CLASSIFICATION NO. 1

APPLICABLE

Applicable to all customers in the City of Lexington, Fayette County, Kentucky, and contiguous territory thereto.

AVAILABILITY OF SERVICE

Available for Residential, Commercial, Industrial, Sales for Resale, Municipal and All Other Public Authority Metered Service.

METER RATES

The following shall be the rates for consumption, in addition to the service charges provided for herein:

	1000 Gallons Per Month	Rate Per 1000 Gallons	100 Cubic Feet Per Month	Rate Per 100 Cubic Feet
(I) For the first	600	1.648	800	$1.236
(I) For all over	600	1.289	800	.967

	1000 Gallons Per Quarter	Rate Per 1000 Gallons	100 Cubic Feet Per Quarter	Rate Per 100 Cubic Feet
(I) For the first	1,800	1.648	2,400	$1.236
(I) For all over	1,800	1.289	2,400	.967

SERVICE CHARGES

All metered general water service customers shall pay a service charge based on the size of meter installed. The service charge will not entitle the customer to any water.

Size of Meter	Service Charge Per Month	Per Quarter
(R) 5/8"	$ 4.92	$ 14.76
(R) 3/4"	7.36	22.08
(R) 1"	12.27	36.81
(R) 1-1/2"	24.54	73.62
(R) 2"	39.25	117.75
(R) 3"	73.60	220.80
(R) 4"	122.67	368.01
(R) 6"	245.35	736.05
(R) 8"	392.56	1,177.68

(I) INDICATES INCREASE
(R) INDICATES REDUCTION

PUBLIC SERVICE COMMISSION OF KENTUCKY EFFECTIVE
JUN 28 1990
PURSUANT TO 807 KAR 5:011, SECTION 9 (1)
BY George Siller
PUBLIC SERVICE COMMISSION MANAGER

ISSUED: July 3, 1990 EFFECTIVE: June 28, 1990

Issued By R. A. Edens, R. A. Edens, Vice President
2300 Richmond Road, Lexington, Kentucky

Issued by authority of an Order of the Public Service Commission, Case No. 89-348, dated June 28, 1990.

C 7-91

KENTUCKY-AMERICAN WATER COMPANY P.S.C. No. 6
Fourteenth Revised Sheet No. 50
Cancelling Thirteenth Revised Sheet No. 50

CLASSIFICATION OF SERVICE
SERVICE CLASSIFICATION NO. 1

APPLICABLE

Applicable to all customers in the City of Lexington, Fayette County, Kentucky, and contiguous territory thereto.

AVAILABILITY OF SERVICE

Available for Residential, Commercial, Industrial, Sales for Resale, Municipal and All Other Public Authority Metered Service.

METER RATES

The following shall be the rates for consumption, in addition to the service charges provided for herein:

	1000 Gallons Per Month	Rate Per 1000 Gallons	100 Cubic Feet Per Month	Rate Per 100 Cubic Feet
(I) For the first	600	1.739	800	$1.304
(I) For all over	600	1.360	800	1.020

	1000 Gallons Per Quarter	Rate Per 1000 Gallons	100 Cubic Feet Per Quarter	Rate Per 100 Cubic Feet
(I) For the first	1,800	1.739	2,400	$1.304
(I) For all over	1,800	1.360	2,400	1.020

SERVICE CHARGES

All metered general water service customers shall pay a service charge based on the size of meter installed. The service charge will not entitle the customer to any water.

Size of Meter	Service Charge Per Month	Per Quarter
(I) 5/8"	$ 5.19	$ 15.57
(I) 3/4"	7.77	23.30
(I) 1"	12.95	38.84
(I) 1-1/2"	25.89	77.68
(I) 2"	41.42	124.25
(I) 3"	77.66	232.99
(I) 4"	129.44	388.32
(I) 6"	258.89	776.68
(I) 8"	414.23	1,242.69

(I) INDICATES INCREASE

PUBLIC SERVICE COMMISSION OF KENTUCKY EFFECTIVE

ISSUED: June 25, 1991 EFFECTIVE: May 30, 1991

MAY 30 1991

Issued By: R. A. Edens, R. A. Edens, Vice President
2300 Richmond Road, Lexington, Kentucky

PURSUANT TO 807 KAR 5:011, SECTION 9 (1)
BY: _____
PUBLIC SERVICE COMMISSION MANAGER

Issued by authority of an Order of the Public Service Commission, Case No. 90-321, dated May 30, 1991.

C1-91

KENTUCKY-AMERICAN WATER COMPANY

P.S.C. No. 6;
Thirteenth Revised Sheet No. 52;
Cancelling Twelfth Revised Sheet No. 52

CLASSIFICATION OF SERVICE

SERVICE CLASSIFICATION NO. 3

APPLICABLE

Applicable to all customers in the City of Lexington, Fayette County, Kentucky and contiguous territory thereto.

AVAILABILITY OF SERVICE

Available for municipal or private fire connections used exclusively for fire protection purposes.

RATES

	Size of Service	Rate Per Month	Rate Per Annum
(I)	2" Diameter	$ 3.23	$ 38.75
(I)	4" Diameter	12.91	154.86
(I)	6" Diameter	29.04	348.47
(I)	8" Diameter	51.63	619.57
(I)	12" Diameter	116.18	1,394.13
(I)	14" Diameter	158.12	1,897.46

SPECIAL PROVISIONS

No charge shall be made for water used in extinguishing accidental fires or for Underwriters' tests, and water shall not be drawn from a private fire service connection for any other purpose.

(I) INDICATES INCREASE

ISSUED: June 25, 1991

EFFECTIVE: May 30, 1991

Issued By: R. A. Edens, R. A. Edens, Vice President
2300 Richmond Road, Lexington, Kentucky

PUBLIC SERVICE COMMISSION OF KENTUCKY EFFECTIVE

MAY 30 1991

PURSUANT TO 807 KAR 5:011, SECTION 9 (1)

BY: Stephanie Bell
PUBLIC SERVICE COMMISSION MANAGER

Issued by authority of an Order of the Public Service Commission, Case No. 90-321, dated May 30, 1991.

C 7-91

KENTUCKY-AMERICAN WATER COMPANY

P.S.C. No. 6;
Twelfth Revised Sheet No. 52;
Cancelling Eleventh Revised Sheet No. 52

CLASSIFICATION OF SERVICE

SERVICE CLASSIFICATION NO. 3

APPLICABLE

Applicable to all customers in the City of Lexington, Fayette County, Kentucky and contiguous territory thereto.

AVAILABILITY OF SERVICE

Available for municipal or private fire connections used exclusively for fire protection purposes.

RATES

	Size of Service	Rate Per Month	Rate Per Annum
(I)	2" Diameter	$ 3.06	$ 36.72
(I)	4" Diameter	12.23	146.76
(I)	6" Diameter	27.52	330.24
(I)	8" Diameter	48.93	587.16
(I)	12" Diameter	110.10	1,321.20
(I)	14" Diameter	149.85	1,798.20

SPECIAL PROVISIONS

No charge shall be made for water used in extinguishing accidental fires or for Underwriters' tests, and water shall not be drawn from a private fire service connection for any other purpose.

PUBLIC SERVICE COMMISSION
OF KENTUCKY
EFFECTIVE

JUN 28 1990

PURSUANT TO 807 KAR 5:011,
SECTION 9 (1)
BY: George Siller
PUBLIC SERVICE COMMISSION MANAGER

(I) INDICATES INCREASE

ISSUED: July 3, 1990 EFFECTIVE: June 28, 1990

Issued By: R. A. Edens, R. A. Edens, Vice President
2300 Richmond Road, Lexington, Kentucky

Issued by authority of an Order of the Public Service Commission, Case No. 89-348, dated June 28, 1990.

C1-91

KENTUCKY-AMERICAN WATER COMPANY

P.S.C. No. 6;
Eleventh Revised Sheet No. 53;
Cancelling Tenth Revised Sheet No. 53

CLASSIFICATION OF SERVICE

SERVICE CLASSIFICATION NO. 4

APPLICABLE

Applicable to all customers in the City of Lexington, Fayette County, Kentucky and contiguous territory thereto.

AVAILABILITY OF SERVICE

Available for municipal or private fire connections used exclusively for fire protection purposes.

RATES FOR PUBLIC FIRE SERVICE

		Rate Per Month	Rate Per Annum
(I)	For each public fire hydrant contracted for or ordered by Urban County, County, State or Federal Governmental Agencies or Institutions	$20.21	$242.50

RATES FOR PRIVATE FIRE SERVICE

(I)	For each private fire hydrant contracted for by Industries or Private Institutions	$29.04	$348.47

(I) INDICATES INCREASE

ISSUED: June 25, 1991 EFFECTIVE: May 30, 1991

Issued By: R. A. Edens, Vice President
2300 Richmond Road, Lexington, Kentucky

PUBLIC SERVICE COMMISSION OF KENTUCKY
EFFECTIVE
MAY 30 1991
PURSUANT TO 807 KAR 5:011, SECTION 9 (1)
BY: PUBLIC SERVICE COMMISSION MANAGER

Issued by authority of an Order of the Public Service Commission, Case No. 90-321, dated May 30, 1991.

KENTUCKY-AMERICAN WATER COMPANY

P.S.C. No. 6;
Tenth Revised Sheet No. 53;
Cancelling Ninth Revised Sheet No. 53

CLASSIFICATION OF SERVICE

SERVICE CLASSIFICATION NO. 4

APPLICABLE

Applicable to all customers in the City of Lexington, Fayette County, Kentucky and contiguous territory thereto.

AVAILABILITY OF SERVICE

Available for municipal or private fire connections used exclusively for fire protection purposes.

RATES FOR PUBLIC FIRE SERVICE

		Rate Per Month	Rate Per Annum
(R)	For each public fire hydrant contracted for or ordered by Urban County, County, State or Federal Governmental Agencies or Institutions	$19.08	$228.87

RATES FOR PRIVATE FIRE SERVICE

(I)	For each private fire hydrant contracted for by Industries or Private Institutions	$27.52	$330.24

PUBLIC SERVICE COMMISSION
OF KENTUCKY
EFFECTIVE

JUN 28 1990

PURSUANT TO 807 KAR 5:011,
SECTION 9 (1)
BY: [signature]
PUBLIC SERVICE COMMISSION MANAGER

(I) INDICATES INCREASE
(R) INDICATES REDUCTION

ISSUED: July 3, 1990

EFFECTIVE: June 28, 1990

Issued By: [signature], R. A. Edens, Vice President
2300 Richmond Road, Lexington, Kentucky

Issued by authority of an Order of the Public Service Commission, Case No. 89-348, dated June 28, 1990.

C 7-91

Kentucky-American Water Company

P.S.C. KY. No. 6
Original Sheet No. 60

(N) Surcharge to Recoup Taxes Refunded Per Administrative Case No. 313

Metered Service

	Surcharge Rate Per 1,000 Gallons	Surcharge Rate Per 100 Cubic Feet
For all metered usage	$.08105	$.06079

Fire Service

Private Fire Service Connections

Size of Service	Rate Per Month	Surcharge Rate Per Annum
2" Diameter	$ .12	$ 1.44
4" Diameter	.48	5.76
6" Diameter	1.09	13.08
8" Diameter	1.93	23.16
12" Diameter	4.32	51.84
14" Diameter	5.89	70.68

Fire Hydrants

Private	$1.09	$13.08
Public	$.75	$9.00

Special Provision

The above rates will be in effect from November 1, 1990 through October 31, 1991 and will be applied on bills rendered.

PUBLIC SERVICE COM...
OF KENTUCKY
EFFECTIVE

NOV 1 1990

PURSUANT TO 807 KAR 5:011,
SECTION 9 (1)
BY: George Siller
PUBLIC SERVICE COMMISSION MANAGER

(N) INDICATES NEW TARIFF

Issued: September 28, 1990

Effective: November 1, 1990

Issued By: R. A. Edens, R. A. Edens, Vice President
2300 Richmond Road, Lexington, Kentucky

C11-91

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

12. Refer to the Direct Testimony of Melissa Schwarzell (Schwarzell Testimony), page 22, lines 8–10. Ms. Schwarzell explains, "that all new Contribution In Aid of Construction (CIAC) receipts are forecasted to be grossed up for income tax, which offsets the cost of the corresponding tax assets to the general customer base." Explain whether Kentucky-American has "grossed-up" to reflect the Federal Income Taxes (FIT) impact of the TCJA for the CIAC's received after January 1, 2018. If yes, provide a list of CIAC's that have been received, the date the CIAC was received, the cost of the project funded by the CIAC, and the FIT gross-up.

Response:

Yes. Kentucky American "grossed-up" Contributions in Aid of Construction for projects funded for others after January 1, 2018. A majority of these projects are associated with water main extension projects and fire service connections made after January 1, 2018. Attached please find a list of CIACs that have been received that includes the date the CIAC was received, the cost of the project funded by the CIAC, and the TCJA gross-up for projects that have not been completed.

Kentucky American Water
Case No. 2018-00358

Witness Responsible:
Brent O'Neill

PSC Data Request 3
Number 12

Work Order	Project Description	Date Deposit Received	Developer Portion of Project	TCJA Gross-up	Deposit Amount
D12-0201-P-1362	Cadentown 3 & 4 @ 2985 Liberty Road	6/5/2018	$85,773	$29,731	$115,504
D12-0201-P-1407	Tuscany, Units 9A2, 9C2, 9D, 9E, and 9F	3/20/2018	$86,790	$30,083	$116,873
D12-0201-P-1409	Carson's Restaurant @ 362 East Main Street	3/20/2018	$15,594	$5,406	$21,000
D12-0201-P-1411	Central Church of God @ 224 New Coleman Lane	3/25/2018	$15,350	$5,321	$20,671
D12-0201-P-1413	Beta Theta Pi @ 440 Pennsylvania Ave	4/10/2018	$14,366	$4,980	$19,346
D12-0201-P-1414	Mashni Jesselin @ 2108 Nicholasville Raod	5/11/2018	$24,466	$8,481	$32,947
D12-0201-P-1419	Highgrove Cottages @ 4268 Saron Drive	7/17/2018	$19,500	$6,760	$26,260
D12-0201-P-1428	Tarr Trace Townhomes @ 946 Tarr Trace	7/31/2018	$54,288	$18,817	$73,105
D12-0201-P-1437	CentrePoint Office Tower @ 100 West Main Street	9/14/2018	$45,066	$15,621	$60,687
D12-0201-P-1450	Planet Fitness - The Shoopes @ Cherry Point	9/20/2018	$58,038	$20,117	$78,155
D12-0201-P-1451	Pleasant Valley, Phase 4-2	8/13/2018	$196,225	$68,015	$264,240
D12-0201-P-1463	Origin Hotel @ 4174 Rowan Drive	9/24/2018	$30,505	$10,574	$41,079
D12-0201-P-1464	Tuscany, Unit 9F, Section 2	9/25/2018	$37,335	$12,941	$50,276
D12-0201-P-1466	Waveland Woods Apartments, 3765 Winthrop Drive	10/16/2018	$10,523	$3,647	$14,170
D12-0201-P-1467	Link Belt @ 2490 Remington Way	11/20/2018	$17,070	$5,917	$22,987
D12-0201-P-1468	2000 Camry Court	10/31/2018	$11,706	$4,057	$15,763
D12-0201-P-1469	Larosa's/First Watch @ 2890 Richmond Road	10/30/2018	$22,195	$7,693	$29,888
D12-0201-P-1474	Masterson Hills, Units 1F, 1G, 1H	1/18/2019	$112,611	$39,034	$151,645
D12-0201-P-1475	Price Farm - Phase 1, Old Oxford Road	10/23/2018	$217,317	$75,327	$292,644
D12-0201 -P-1478	C&R Asphalt @ 2670 Richmond Road	12/12/2018	$23,756	$8,235	$31,991
D12-0201-P-1480	Centre City Hotels @ 100 W Main Street	12/17/2018	$14,363	$4,978	$19,341
D12-0201-P-1481	Lakeview Industrial Subdivision Unit 3, Lots 1A & 1B	12/28/2018	$11,165	$3,870	$15,035
D12-0201-P-1484	Rocky Creek Reserve Phase 3	1/16/2019	$70,014	$24,248	$94,262
D12-0201-P-1485	Summerridge Lane Main Extension	1/14/2019	$4,454	$1,544	$5,998
D12-02D1.18-P-0010	Hope Center Permanent Housing Hydrant	10/24/2018	$3,011	$1,044	$4,055
D12-02D1.18-P-0010	Creekside Elementary School	12/4/2018	$47,260	$17,307	$64,567
D12-02D1.18-P-0011	Bluegrass RV Storage 3036 Paris Pike	1/29/2019	$7,844	$2,720	$10,564
D12-02D1.18-P-0012	BG Airport Car Rental Facilities, Phase 2	1/24/2019	$40,762	$14,129	$54,891

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

13. Refer to the Schwarzell Testimony, page 23, lines 4–5. According to Ms. Schwarzell, Kentucky-American began grossing-up customer advances to collect the additional funds from developers to recognize the taxability customer advances received. Provide a list of customer advances that have been received since January 1, 2018, the cost to actually construct each project that was donated to Kentucky-American as a customer advance, and the FIT gross-up for each project.

Response:

Kentucky-American receives an advance from the developer to cover the estimate for the work and materials required for the installation of water main associated with a development or fire service. Following receipt of the advance, Kentucky-American undertakes the installation of the necessary improvements as a project by the Company. Currently, Kentucky-American does not receive water main from developers that was installed by the developer and transferred to the Company that could be considered a "donation" of assets to the Company. The following is the list of customer advances that have been received since January 1, 2018 where the project has been completed and have actual construction costs.

Work Order	Project Description	Actual Construction Costs	Developer Deposit	TCJA Gross-up
D12-0201-P-1406	Blackford Parkway, Phase 3, Units 1M, 1N and IP	$162,109	$238,876	$61,487
D12-0201-P-1408	Pleasant Valley, Unit 2, Section 3	$71,022	$95,046	$24,511
D12-0201-P-1417	345 Flats @ 345 Blackburn Ave	$15,761	$21,085	$5,429
D12-0201-P-1418	Beverly Apartments @ 261 Lyndhurst Place	$15,769	$17,531	$4,513
D12-0201-P-1422	Meadows @ Rocky Creek, Section 1C	$119,519	$177,206	$45,613
D12-0201-P-1427	Winding Creek @ Monticello - 3455 Saybrook Drive	$68,730	$83,011	$21,367

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

14. In Administrative Case No. 313, the Commission ordered that taxable Class A and B water and sewer utilities to use the "no gross-up" methodology for CIAC and customer advances collected on and after the date of that Order. Cite any Orders that have been issued by this Commission revising its earlier requirement for Kentucky-American to use that "no gross-up" method.

Response:

Kentucky American is not aware of any orders that have been issued by the Commission revising its requirement following the August 12, 1987 Administrative Case No. 313 regarding the effects of the Tax Reform Act of 1986.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

15. Explain whether Kentucky-American is requesting that the Commission reconsider its ruling in Administrative Case No. 313 requiring Class A and B water utilities to use the "no gross-up" methodology for Contributions in Aid of Construction and Customer Advances.

Response:

The Company is not requesting this.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: John R. Wilde

16. Refer to Kentucky-American's Response to Staff's Second Request, Item 65.b. Kentucky-American refers to its ability to execute a "calculation applying ARAM to all plant related EADIT outside PowerTax using an Excel spreadsheet." Calculate the excess protected and unprotected excess Accumulated Deferred Income Tax (ADIT) using the referenced Excel spreadsheet.

Response:

Kentucky American stated in its response to Staff's Second Request, Item 65.b "*Kentucky-American does not anticipate being unable to provide updated EADIT estimates and the required amount of normalization by mid-April 2019. However, if that were to occur Kentucky-American would likely be at a stage with respect to its system reimplementation to be able to execute a calculation applying ARAM to all plant related EADIT outside of PowerTax using an Excel spreadsheet."*

At this point Kentucky American believes that it will be able to produce ARAM estimates by mid-April 2019, and, as such, spreadsheet ARAM computations have not been completed.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: John R. Wilde

17. If Kentucky-American is unable to provide the Excel spreadsheet requested in Item 16 above, provide an estimated date the spreadsheet will be available. When available, provide a copy of the Excel spreadsheet with all formulas intact and unprotected, and all rows and columns fully accessible.

Response:

See response to Staff 3-16.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: John R. Wilde

18. Refer to Kentucky-American's Response to the Attorney General's First Request for Information (Attorney General's First Request), Item 31.

a. Provide a schedule comparing the protected and unprotected federal excess ADIT reported in Case No. 2018-00042[1] to the amounts to the actual amounts recorded on Kentucky-American's books as a regulatory liability.

b. Explain if the gross-up rate used to record the protected and unprotected federal excess ADIT on Kentucky-American's books use a Kentucky income tax rate of 5 percent or 4 percent.

c. Given that the Kentucky income tax rate change was retroactive to January 1, 2018, confirm that Kentucky-American has recorded the excess State ADIT liability as of the January 1, 2018 effective date.

Response:

a. See attachment "KAWC_R_PSCDR3_NUM018_Attachment" for a schedule of the estimated Plant and Non-Plant excess ADIT as determined at the end of 2017, the correction made afterwards for the testimony, and the update after the tax return at the end of 2018. The Company will not have the amounts subject to and not subject to normalization until it finishes implementing its software.

b. The Company used 6% in its gross up rate because the state statutory rate was 6% in 2017.

c. Yes, that is correct. As of December 2018 year end, the Company estimated the excess state deferred taxes to be $1.06m and, with the gross up, recorded $1.4m.

[1] Case No. 2018-00042, *Electronic Investigation of the Impact of the Tax Cuts and Job Act on the Rates of Kentucky-American Water Company* (filed Aug. 8, 2018).

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Constance E. Heppenstall

19. Refer to Kentucky-American's Response to Staff's Second Request, Item 3. Provide each class's rate of return on rate base and total rate of return on rate base at present and proposed rates.

Response:

See attached schedules.

KENTUCKY AMERICAN WATER COMPANY

DEVELOPMENT OF RATE OF RETURN BY CUSTOMER CLASSIFICATION
UNDER PRESENT RATES

ITEM	COST OF SERVICE	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	PUBLIC	SALES FOR RESALE	FIRE PROTECTION	
							PRIVATE	PUBLIC
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. REVENUES FROM SALES	$ 85,481,611	$ 47,551,194	$ 21,724,229	$ 2,515,892	$ 5,703,375	$ 1,711,090	$ 2,664,721	$ 3,611,110
2. OTHER REVENUES	3,034,555	2,179,756	513,364	31,336	111,975	19,757	96,056	82,312
3. TOTAL OPERATING REVENUES	88,516,166	49,730,950	22,237,593	2,547,228	5,815,350	1,730,847	2,760,777	3,693,422
4. LESS: OPERATING EXPENSES	64,222,502	37,898,152	15,517,527	1,846,480	4,043,067	1,242,118	1,565,011	2,110,146
5. RETURN AND INCOME TAXES	24,293,664	11,832,798	6,720,067	700,747	1,772,282	488,729	1,195,766	1,583,276
6. LESS: TAXABLE EXCLUSIONS (FACTOR 18)	12,919,999	6,546,563	3,559,460	377,264	937,992	250,648	421,192	826,880
7. TAXABLE INCOME	11,373,665	5,286,234	3,160,607	323,483	834,291	238,081	774,574	756,396
8. LESS: INCOME TAXES (TAX. INC.)	2,737,091	1,386,884	754,069	79,923	198,713	53,100	89,229	175,174
9. NET RETURN (Line 5 - Line 8)	21,556,572	10,445,914	5,965,998	620,824	1,573,570	435,629	1,106,537	1,408,102
10. ORIGINAL COSTS MEASURE OF VALUE	441,111,572	223,508,756	121,507,652	12,862,080	32,033,443	8,576,965	14,397,176	28,225,501
11. RATE OF RETURN, PERCENT	4.89	4.67	4.91	4.83	4.91	5.08	7.69	4.99
12. RELATIVE RATE OF RETURN	1.00	0.96	1.00	0.99	1.01	1.04	1.57	1.02

KENTUCKY AMERICAN WATER COMPANY

DEVELOPMENT OF RATE OF RETURN BY CUSTOMER CLASSIFICATION
UNDER PROPOSED RATES

ITEM	COST OF SERVICE	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	PUBLIC	SALES FOR RESALE	FIRE PROTECTION	
							PRIVATE	PUBLIC
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. REVENUES FROM SALES	$ 105,346,347	$ 58,459,635	$ 27,128,329	$ 3,095,858	$ 7,123,901	$ 2,078,311	$ 3,011,136	$ 4,449,177
2. OTHER REVENUES	3,034,555	2,177,429	514,236	31,255	112,252	19,732	96,333	83,319
3. TOTAL OPERATING REVENUES	108,380,902	60,637,064	27,642,565	3,127,113	7,236,153	2,098,043	3,107,469	4,532,496
4. LESS: OPERATING EXPENSES	64,443,821	38,119,546	15,523,844	1,842,401	4,037,951	1,239,867	1,569,908	2,110,305
5. RETURN AND INCOME TAXES	43,937,081	22,517,517	12,118,721	1,284,713	3,198,202	858,176	1,537,561	2,422,191
6. LESS: TAXABLE EXCLUSIONS (FACTOR 18)	12,919,999	6,550,439	3,556,876	375,972	937,992	250,648	421,192	826,880
7. TAXABLE INCOME	31,017,082	15,967,078	8,561,845	908,741	2,260,210	607,528	1,116,369	1,595,311
8. LESS: INCOME TAXES (TAX. INC.)	7,638,189	3,872,562	2,102,794	222,271	554,533	148,181	249,005	488,844
9. NET RETURN (Line 5 - Line 8)	36,298,891	18,644,955	10,015,927	1,062,441	2,643,669	709,995	1,288,556	1,933,347
10. ORIGINAL COSTS MEASURE OF VALUE	441,111,572	223,628,669	121,452,569	12,848,840	32,007,419	8,568,138	14,393,219	28,212,717
11. RATE OF RETURN, PERCENT	8.23	8.34	8.25	8.27	8.26	8.29	8.95	6.85
12. RELATIVE RATE OF RETURN	1.00	1.01	1.00	1.00	1.00	1.01	1.09	0.83

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Gregory P. Roach

20. Refer to Kentucky-American's Response to Staff's Second Request, Item 11.

a. Explain why weather normalization is performed in the forecast of water usage.

b. Explain why Kentucky-American believes the models become insignificant when the climatic component is removed.

c. Provide these regression model results similar to Tables GPR-1 and GPR-2 of the Direct Testimony of Gregory P. Roach (Roach Testimony).

Response:

a. Weather may have a significant effect on residential usage per customer during summer months. This occurs when certain climatic conditions, such as higher- or lower-than-normal: temperatures, rainfall, cloud cover, and wind, create increases or decreases in discretionary outdoor water usage such as irrigation, swimming pool filing/usage, outdoor home maintenance and automobile maintenance. In order to capture future trends of water usage that are not influenced by the impact of these climatic conditions, it is important to normalize the water usage time series for the effects of climatic conditions on outdoor usage so as to normalize the water usage time series for those weather conditions and allow the underlying water usage trend to be analyzed and forecast.

b. When climate is removed as a variable from the Commercial model, the R-Square is only .329. Because R-squared is the percent of variance explained by the model, an R-squared of only .329 is unacceptably low. The F-statistic is a test for testing the "null hypothesis." The null hypothesis can be thought of as a *nullifiable* hypothesis. In this instance the nullifiable hypothesis is that the model has estimate the true regression coefficients. Here too, the F-Statistic of 3.921 indicates that the commercial model does not pass the 90% confidence interval (or above) for rejecting the null hypothesis that the model has estimated the true regression coefficients. As such the model is not reliable for estimating or forecasting purposes.

For the residential model, the theoretical construct of ignoring climate change makes the model unacceptable.

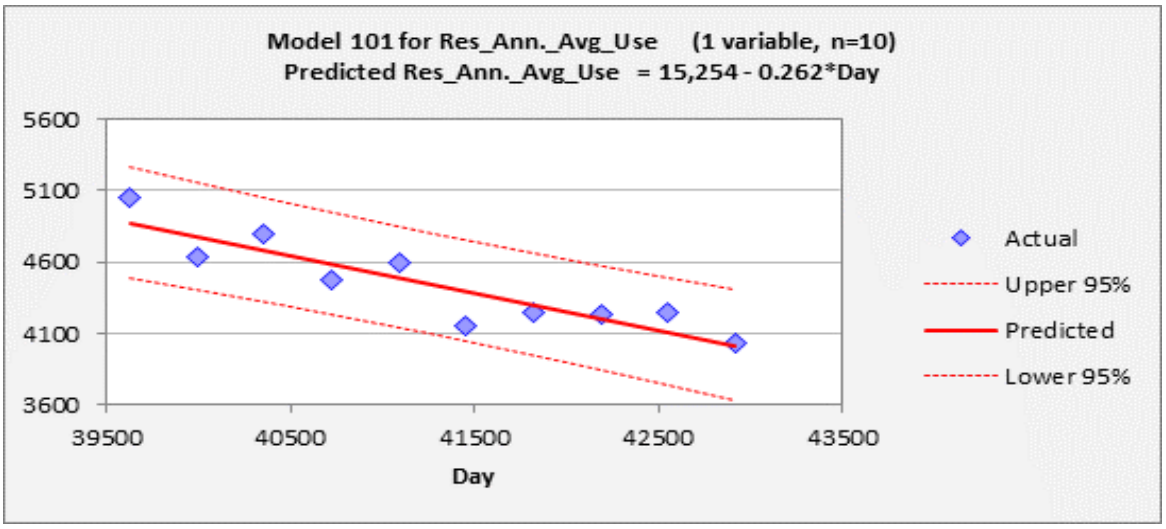
c. Please see KAW_R_PSCDR3_NUM20_030119_Attachment_Residential_1, KAW_R_PSCDR3_NUM20_030119_Attachment_Residential_2, KAW_R_PSCDR3_NUM20_030119_Attachment_Commercial_1 and KAW_R_PSCDR3_NUM20_030119_Attachment_Commercial_2 for all data and calculations.

Model: Model 101
Dependent Variable: Res_Ann._Avg_Use

	R-Squared	Adj.R-Sqr.	Std.Err.Reg.	Std.Dep.Var.	# Fitted	# Missing	t(2.50%,8)	Confidence
	0.818	0.795	144.812	320.125	10	0	2.306	95.0%

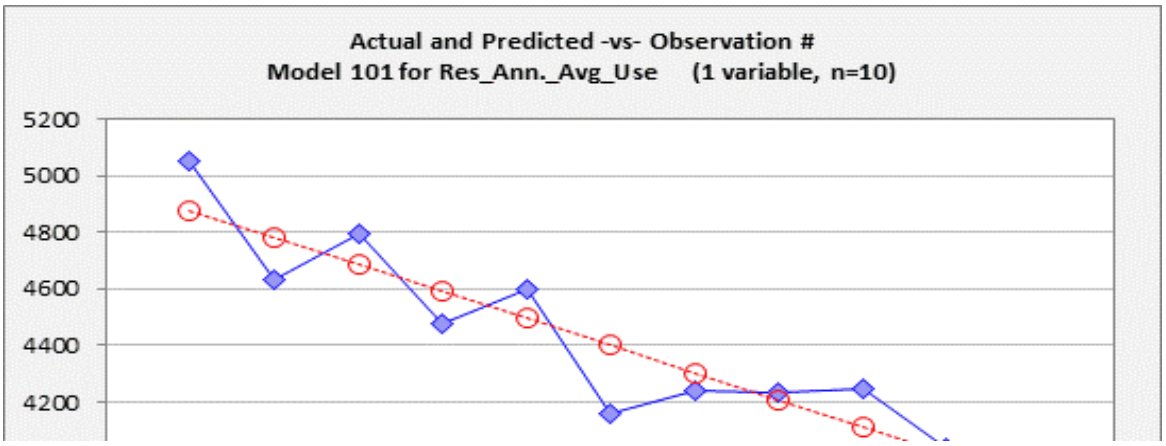
Variable	Coefficient	Std.Err.	t-Statistic	P-value	Lower95%	Upper95%	VIF	Std. Coeff.
Constant	15,254	1,802	8.464	0.000	11,098	19,410	0.000	0.000
Day	-0.262	0.044	-5.998	0.000	-0.363	-0.161	1.000	-0.904

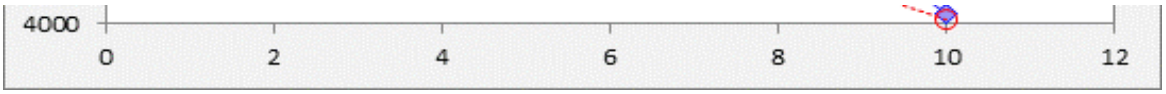
Source	Deg. Freedom	Sum Squares	Mean Square	F-Statistic	P-value
Regression	1	754,559	754,559	35.982	0.000
Residual	8	167,764	20,970		
Total	9	922,322			

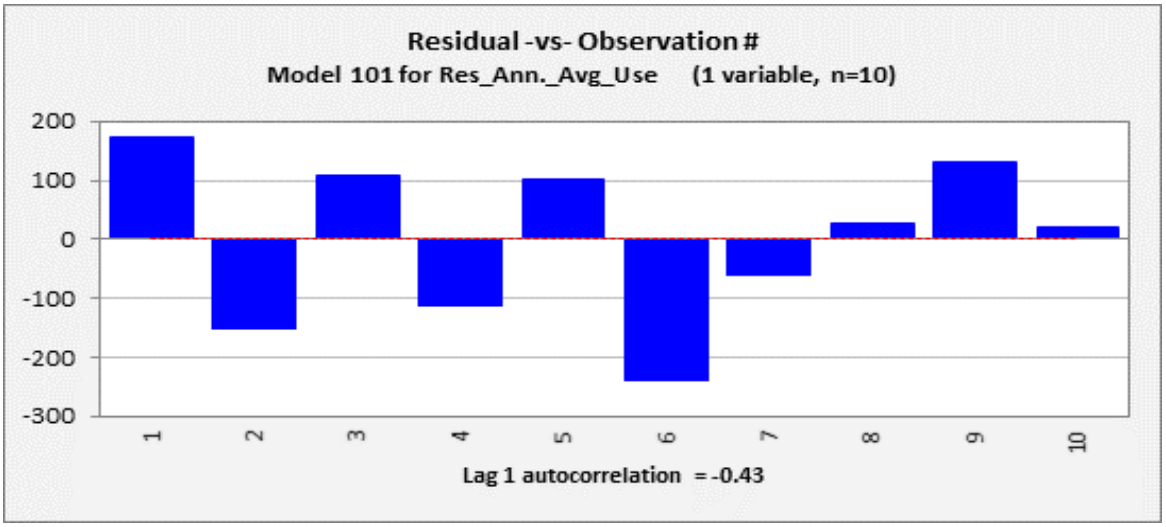


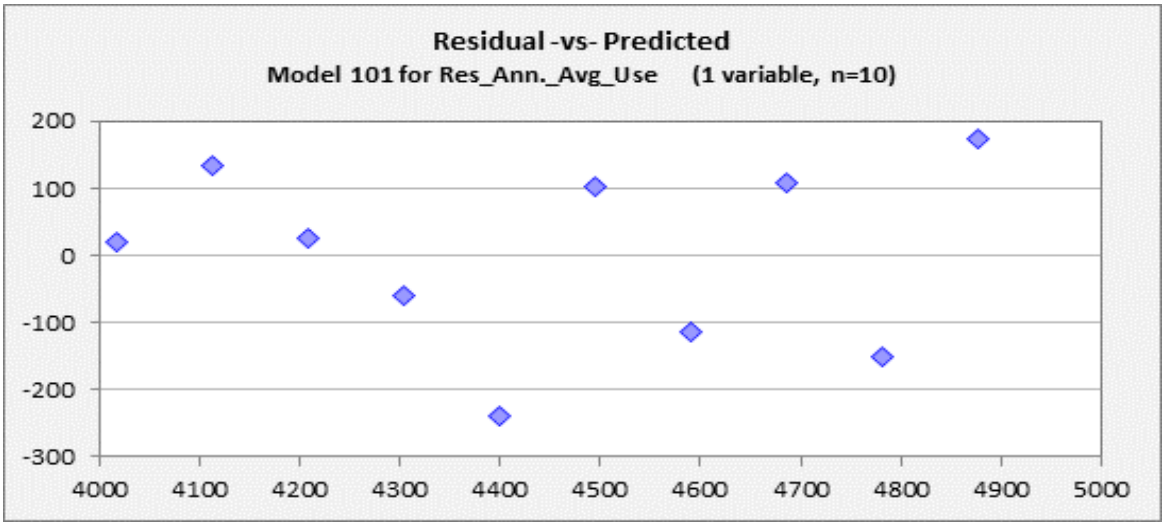
	Mean Error	RMSE	MAE	Minimum	Maximum	MAPE	A-D* stat	MASE lag 1
Fitted (n=10)	0.000	129.524	112.775	-239.875	173.657	2.5%	0.30 (P=0.596)	0.574

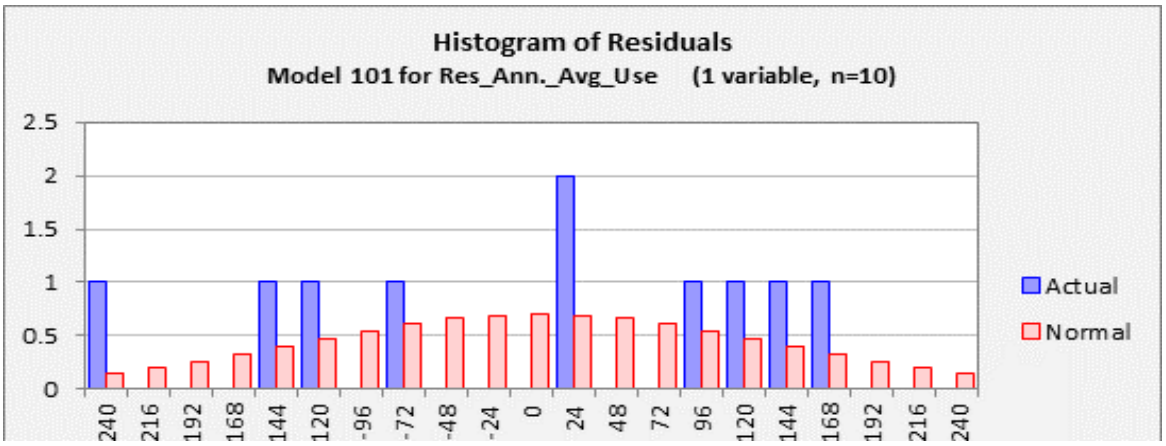
Lag	1
Autocorrelation	-0.428
StdErrorsFromZero	-1.285
Durbin-Watson	2.675



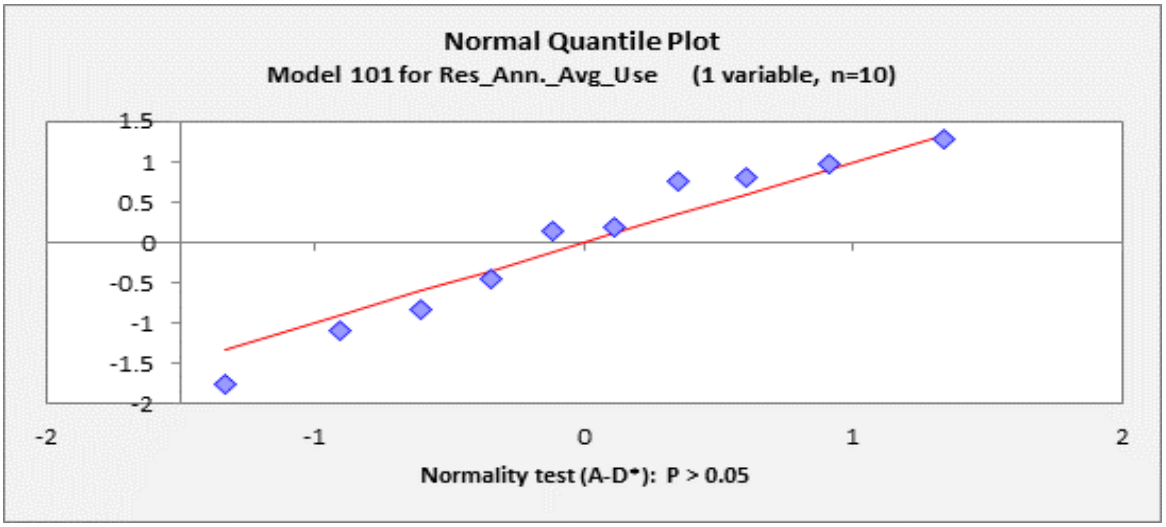

4000
0
2
4
6
8
10
12


Residual -vs- Observation #
Model 101 for Res_Ann._Avg_Use (1 variable, n=10)
200
100
0
-100
-200
-300
1
2
3
4
5
6
7
8
9
10
Lag 1 autocorrelation = -0.43


Residual -vs- Predicted
Model 101 for Res_Ann._Avg_Use (1 variable, n=10)
200
100
0
-100
-200
-300
4000
4100
4200
4300
4400
4500
4600
4700
4800
4900
5000


Histogram of Residuals
Model 101 for Res_Ann._Avg_Use (1 variable, n=10)
2.5
2
1.5
1
0.5
0
240
216
192
168
144
120
96
72
48
24
0
-24
-48
-72
-96
-120
-144
-168
-192
-216
-240
Actual
Normal

Normality test (A-D*): P > 0.05



Kentucky American Water
Residential Customer and Consumption Data
2008-2017

Decline/Cust/Month in Gallons: -96
Decline/Cust/Year in Gallons: -1147

Regression Formula (TIME): **Predicted Res_Ann._Avg_Use = 15,254 - 0.262*Day**

Annual Rate @ 2017: **-2.38%**

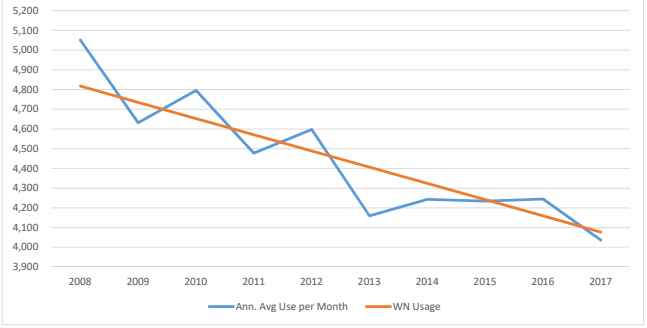
10-Year Study

Year	Day	Annual CDD	Annual HDD	May-Oct Precip	Residential Avg Use per M	Weather Usage	WN Usage	Forecast
2008	39630	1,167	4,842	17	5,051	233.90	4,816.96	
2009	39995	999	4,694	35	4,632	(103.20)	4,734.77	
2010	40360	1,541	4,942	23	4,795	142.29	4,652.57	
2011	40725	1,265	4,447	29	4,477	(93.29)	4,570.38	
2012	41091	1,326	4,026	22	4,597	109.16	4,487.96	
2013	41456	1,216	4,695	35	4,159	(246.57)	4,405.77	
2014	41821	1,232	4,960	33	4,243	(80.62)	4,323.58	
2015	42186	1,244	4,365	26	4,234	(7.08)	4,241.39	
2016	42552	1,602	4,070	25	4,245	85.76	4,158.97	
2017	42917	1,253	3,786	31	4,036	(40.33)	4,076.78	
2018	43282							3,920.95
2019	43647							3,825.38
2020	44013							3,729.55
2021	44378							3,633.97
2022	44743							3,538.40

NORMALS

CDD	1,285
HDD	4,483
Precip	27.5

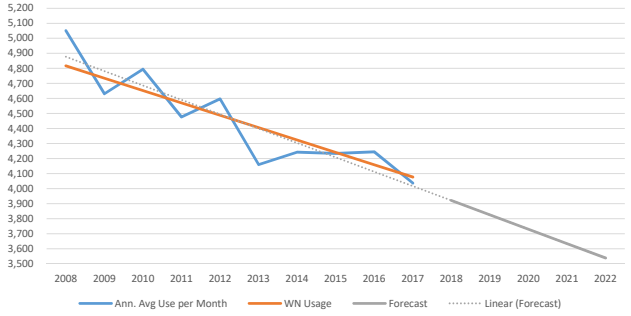
Figure GPR-1
KAWC Weather Normalize Residential Annual Usage
Gallons Per Customer Month



Notes on Usage Data
2008-2016 Hyperion
Jan 2017 - Dec 2017 from BI bill analysis report

Notes on Customer Count Data
Jan 2013 - Dec 2017 Customer Review file from 2018 rate case
Jan 2008 - Dec 2012 from Hyperion

Figure GPR-2
KAWC Weather Normalize Residential Annual Usage Forecast
Gallons Per Customer Month



DATE	Day	USAGE (KGAL)	# Cust.	Monthly Usage Annual r Customer	Average U	CDD	HDD	Precip	Tmax	Weather Normalize Trend
Jan-08	39448	480,523	106,086	4,530		0	1,015	4.42	40.50	4925
Feb-08	39479	479,531	106,072	4,521		0	856	5.76	43.20	4917
Mar-08	39508	423,595	106,293	3,985		0	647	6.30	54.10	4909
Apr-08	39539	427,034	106,292	4,018		13	326	5.90	64.80	4901
May-08	39569	486,806	106,529	4,570		31	146	4.41	71.60	4893
Jun-08	39600	560,973	106,581	5,263		266	0	3.59	84.20	4885
Jul-08	39630	618,820	106,814	5,793		328	0	3.42	86.30	4877
Aug-08	39661	718,147	107,224	6,698		295	0	2.18	86.00	4869
Sep-08	39692	685,000	107,195	6,390		196	2	1.42	83.10	4861
Oct-08	39722	627,618	107,161	5,857		38	280	1.54	69.10	4853
Nov-08	39753	511,454	107,082	4,776		0	665	2.53	52.10	4845
Dec-08	39783	450,080	106,913	4,210	5,051	0	905	6.04	45.60	4837
Jan-09	39814	518,666	106,914	4,851		0	1,134	4.33	36.60	4829
Feb-09	39845	451,117	106,974	4,217		0	763	2.54	47.30	4821
Mar-09	39873	425,317	107,009	3,975		0	528	2.39	57.80	4814
Apr-09	39904	460,127	107,178	4,293		38	322	4.78	65.60	4805
May-09	39934	457,125	107,311	4,260		78	92	6.03	73.60	4798
Jun-09	39965	534,248	107,362	4,976		268	10	5.19	82.90	4789
Jul-09	39995	601,846	107,379	5,605		219	4	7.57	80.30	4782
Aug-09	40026	559,318	107,642	5,196		257	3	4.54	82.20	4774
Sep-09	40057	547,107	107,598	5,085		133	29	5.90	76.80	4765
Oct-09	40087	503,632	107,654	4,678		6	373	5.78	61.80	4758
Nov-09	40118	445,416	107,596	4,140		0	510	0.96	57.40	4749
Dec-09	40148	462,586	107,500	4,303	4,632	0	926	4.03	42.50	4742
Jan-10	40179	496,208	107,578	4,613		0	1,137	3.02	35.10	4733
Feb-10	40210	417,139	107,757	3,871		0	1,013	1.61	35.80	4725
Mar-10	40238	424,449	107,860	3,935		0	567	1.14	56.10	4718
Apr-10	40269	494,117	108,117	4,570		36	202	2.31	71.60	4710
May-10	40299	458,240	108,241	4,234		130	73	9.95	75.70	4702
Jun-10	40330	521,307	108,223	4,817		348	0	4.59	86.10	4694
Jul-10	40360	616,630	108,325	5,692		403	0	6.06	87.50	4686
Aug-10	40391	581,015	108,424	5,359		406	0	0.58	89.20	4678
Sep-10	40422	663,809	108,472	6,120		201	31	0.61	83.80	4670
Oct-10	40452	625,130	108,347	5,770		17	212	1.24	72.00	4662
Nov-10	40483	509,493	108,291	4,705		0	544	4.46	58.00	4654
Dec-10	40513	417,678	108,389	3,854	4,795	0	1,163	2.50	33.40	4646
Jan-11	40544	537,690	108,446	4,958		0	1,132	2.04	35.30	4638
Feb-11	40575	414,342	108,390	3,823		0	744	6.23	47.90	4630
Mar-11	40603	410,416	108,590	3,779		4	575	4.69	55.50	4622
Apr-11	40634	439,334	108,838	4,037		21	225	12.70	68.80	4614
May-11	40664	440,770	109,038	4,042		115	150	6.45	72.70	4606
Jun-11	40695	535,835	109,020	4,915		251	0	3.20	83.30	4598
Jul-11	40725	592,652	109,105	5,432		443	0	4.93	89.10	4590
Aug-11	40756	548,956	109,295	5,023		317	0	3.64	85.90	4582
Sep-11	40787	603,405	109,354	5,518		109	86	5.98	74.80	4574
Oct-11	40817	477,737	109,302	4,371		5	326	4.41	65.60	4566
Nov-11	40848	421,793	109,207	3,862		0	456	7.68	58.80	4558
Dec-11	40878	432,483	109,071	3,965	4,477	0	753	4.43	48.60	4550
Jan-12	40909	462,037	109,285	4,228		0	857	3.54	47.40	4542
Feb-12	40940	410,877	109,508	3,752		0	724	3.10	49.10	4534
Mar-12	40969	413,697	109,782	3,768		32	303	3.31	66.90	4527
Apr-12	41000	432,461	110,019	3,931		15	288	2.30	67.60	4518
May-12	41030	455,249	110,165	4,132		148	34	3.61	79.70	4511
Jun-12	41061	622,767	110,453	5,638		240	18	1.61	85.20	4503
Jul-12	41091	724,137	110,556	6,550		479	0	8.02	92.20	4495
Aug-12	41122	658,716	110,784	5,946		286	0	2.15	85.30	4487
Sep-12	41153	532,256	110,879	4,800		121	77	5.41	76.70	4478
Oct-12	41183	506,468	111,366	4,548		5	337	1.28	63.40	4471
Nov-12	41214	461,480	111,417	4,142		0	668	1.76	54.10	4462
Dec-12	41244	415,717	111,457	3,730	4,597	0	720	6.56	49.00	4455
Jan-13	41275	466,325	110,286	4,228		0	911	4.46	43.50	4446
Feb-13	41306	434,074	110,430	3,931		0	837	1.53	44.40	4438
Mar-13	41334	405,078	110,601	3,663		0	789	5.35	48.30	4431
Apr-13	41365	418,930	110,770	3,782		28	300	4.88	66.90	4423
May-13	41395	455,956	112,842	4,041		120	83	5.66	75.70	4415
Jun-13	41426	528,796	112,909	4,683		261	0	7.54	83.70	4407
Jul-13	41456	475,444	112,957	4,209		296	0	9.10	83.20	4399
Aug-13	41487	529,828	113,608	4,664		310	3	5.14	84.30	4391
Sep-13	41518	512,147	113,783	4,501		159	20	1.63	80.30	4383
Oct-13	41548	528,595	113,723	4,648		42	269	6.23	67.80	4375
Nov-13	41579	400,534	113,691	3,523		0	648	2.45	53.40	4367
Dec-13	41609	459,418	113,777	4,038	4,159	0	835	5.58	45.70	4359
Jan-14	41640	493,103	113,816	4,332		0	1,181	2.31	37.50	4351
Feb-14	41671	493,795	113,795	4,339		0	915	4.73	41.00	4343
Mar-14	41699	437,161	113,580	3,849		0	721	2.89	53.30	4335
Apr-14	41730	446,063	113,585	3,927		13	212	6.00	69.90	4327
May-14	41760	452,219	113,550	3,983		139	92	5.44	77.90	4319
Jun-14	41791	522,245	113,659	4,595		297	0	5.59	84.40	4311
Jul-14	41821	581,709	113,591	5,121		260	2	3.23	83.70	4304
Aug-14	41852	516,761	114,292	4,521		337	0	9.58	85.20	4295
Sep-14	41883	516,726	114,408	4,517		161	30	4.35	80.30	4287
Oct-14	41913	510,909	114,505	4,462		25	226	4.48	68.00	4279
Nov-14	41944	386,993	114,440	3,382		0	764	2.37	48.40	4271
Dec-14	41974	445,274	114,534	3,888	4,243	0	817	3.30	45.40	4263
Jan-15	42005	496,999	114,636	4,335		0	1,049	1.85	40.10	4255
Feb-15	42036	409,081	114,766	3,564		0	1,118	3.00	34.60	4247
Mar-15	42064	472,025	115,014	4,104		0	655	7.46	54.20	4240
Apr-15	42095	461,866	115,157	4,011		11	265	11.41	67.20	4232
May-15	42125	444,309	115,174	3,858		152	61	2.07	79.00	4224
Jun-15	42156	563,334	115,527	4,876		280	18	5.64	83.30	4216
Jul-15	42186	513,500	115,691	4,439		341	0	9.66	84.90	4208
Aug-15	42217	518,053	115,882	4,471		247	0	2.19	83.90	4200
Sep-15	42248	574,523	116,068	4,950		193	16	2.72	82.50	4192

Oct-15	42278	541,831	116,091	4,667		17	242	3.45	68.10	4184
Nov-15	42309	425,337	116,144	3,662		3	440	3.23	60.20	4176
Dec-15	42339	450,092	116,165	3,875	4,234	0	501	7.22	56.80	4168
Jan-16	42370	438,318	116,124	3,775		0	1,025	1.24	41.00	4160
Feb-16	42401	430,536	116,263	3,703		0	775	4.46	47.00	4152
Mar-16	42430	431,088	116,397	3,704		2	402	2.80	62.10	4144
Apr-16	42461	464,312	116,599	3,982		24	267	3.31	68.50	4136
May-16	42491	436,240	116,819	3,734		81	142	6.49	72.80	4128
Jun-16	42522	543,599	116,944	4,648		305	1	4.56	86.20	4120
Jul-16	42552	556,625	116,893	4,762		411	0	4.98	87.40	4112
Aug-16	42583	565,559	117,139	4,828		424	0	6.54	87.60	4104
Sep-16	42614	566,648	117,276	4,832		265	18	1.67	85.30	4096
Oct-16	42644	549,271	117,385	4,679		76	120	0.83	75.10	4088
Nov-16	42675	501,169	117,324	4,272		14	458	1.34	62.20	4080
Dec-16	42705	471,584	117,366	4,018	4,245	0	862	6.18	45.30	4072
Jan-17	42736	467,875	117,337	3,987		0	767	4.72	47.10	4064
Feb-17	42767	421,264	117,359	3,590		3	511	3.39	57.40	4056
Mar-17	42795	403,788	117,658	3,432		5	537	3.29	58.60	4048
Apr-17	42826	426,740	117,991	3,617		62	138	1.85	72.60	4040
May-17	42856	464,428	118,171	3,930		119	102	5.64	75.50	4032
Jun-17	42887	536,481	118,262	4,536		235	6	5.78	83.60	4024
Jul-17	42917	535,084	118,218	4,526		379	0	5.24	86.70	4017
Aug-17	42948	541,171	118,378	4,572		249	0	5.07	83.00	4008
Sep-17	42979	552,157	118,437	4,662		140	38	3.74	78.80	4000
Oct-17	43009	489,137	118,485	4,128		55	221	5.76	70.60	3992
Nov-17	43040	452,419	118,442	3,820		6	535	2.35	57.10	3984
Dec-17	43070	430,850	118,448	3,637	4,036	0	931	2.38	44.30	3976
7/1/2018	43282									3921
7/1/2019	43647									3825
7/1/2020	44013									3730
7/1/2021	44378									3634
7/1/2022	44743									3538

Decline/Cust/Month in Gallons	-96
Decline/Cust/Year in Gallons	-1147
Annual Rate @ 2017	**-2.38%**

Model: Com-Day
Dependent Variable: Com_Ann._Avg_Use
Independent Variables:
Day
Equation:
Predicted Com_Ann._Avg_Use = 77,075 - 0.987*Day

Regression Statistics: Com-Day for Com_Ann._Avg_Use (1 variable, n=10)

R-Squared	Adj.R-Sqr.	Std.Err.Reg.	Std.Dep.Var.	# Fitted	# Missing	t(2.50%,8)	Confidence
0.329	0.245	1,654	1,904	10	0	2.306	95.0%

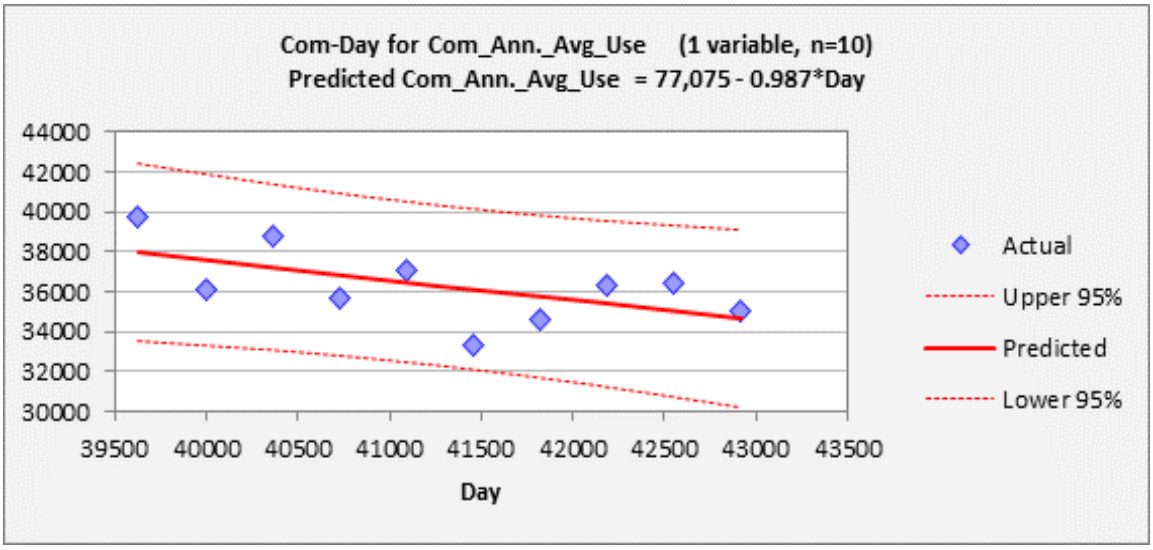
Coefficient Estimates: Com-Day for Com_Ann._Avg_Use (1 variable, n=10)

Variable	Coefficient	Std.Err.	t-Statistic	P-value	Lower95%	Upper95%	VIF	Std. Coeff.
Constant	77,075	20,588	3.744	0.006	29,599	124,551	0.000	0.000
Day	-0.987	0.499	-1.980	0.083	-2.137	0.162	1.000	-0.574

Analysis of Variance: Com-Day for Com_Ann._Avg_Use (1 variable, n=10)

Source	Deg. Freedom	Sum Squares	Mean Square	F-Statistic	P-value
Regression	1	10,731,724	10,731,724	3.921	0.083
Residual	8	21,893,157	2,736,645		
Total	9	32,624,881			

Line Fit Plot



Error Distribution Statistics: Com-Day for Com_Ann._Avg_Use (1 variable, n=10)

	Mean Error	RMSE	MAE	Minimum	Maximum	MAPE	A-D* stat	MASE lag 1
Fitted (n=10)	-1.237E-11	1,480	1,332	-2,821	1,817	3.7%	0.45 (P=0.275)	0.627

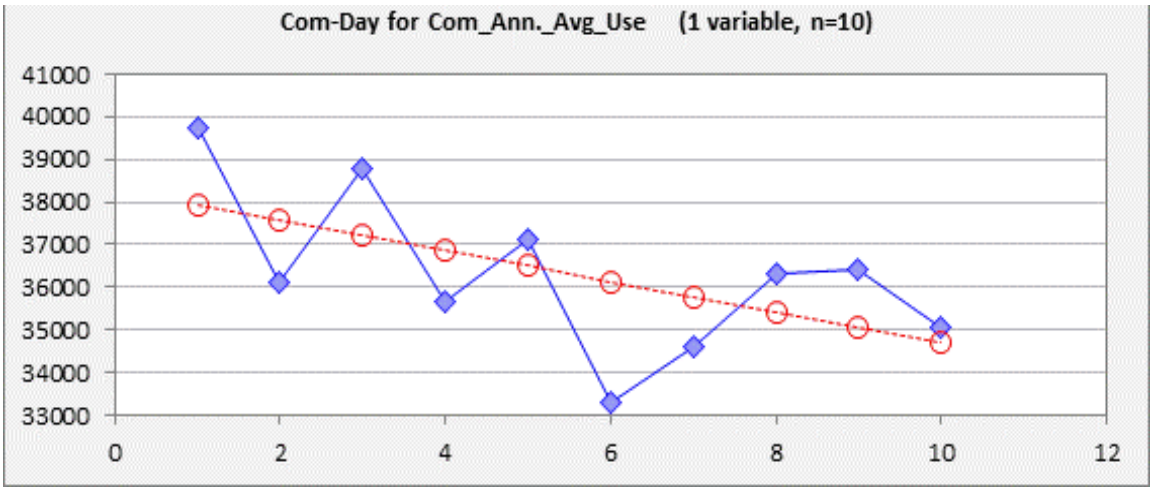
Residual Autocorrelations: Com-Day for Com_Ann._Avg_Use (1 variable, n=10)

Lag	1
Autocorrelation	-0.244
StdErrorsFromZero	-0.731
Durbin-Watson	2.330

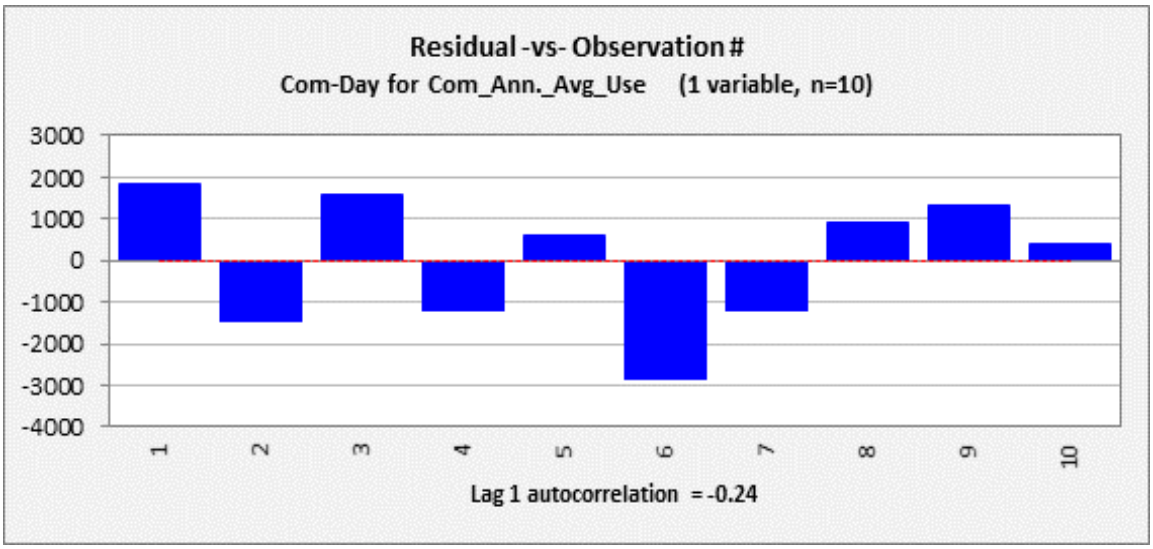
Correlation Matrix of Coefficient Estimates : Com-Day for Com_Ann._Avg_Use (1 variable, n=10)

Forecasts: Com-Day for Com_Ann._Avg_Use (1 variable, n=10)

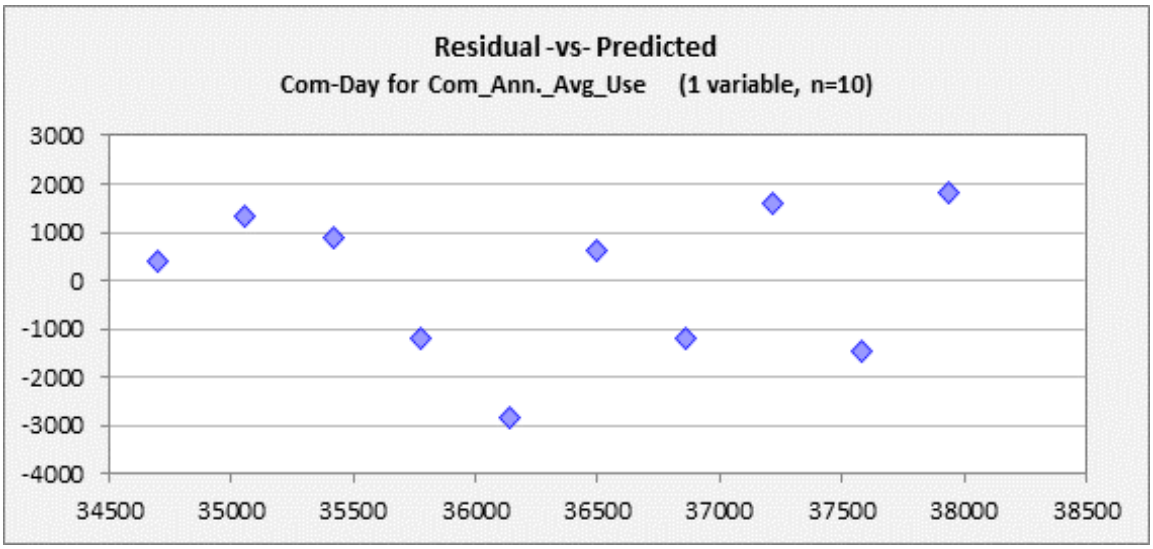
Actual and Predicted -vs- Observation #



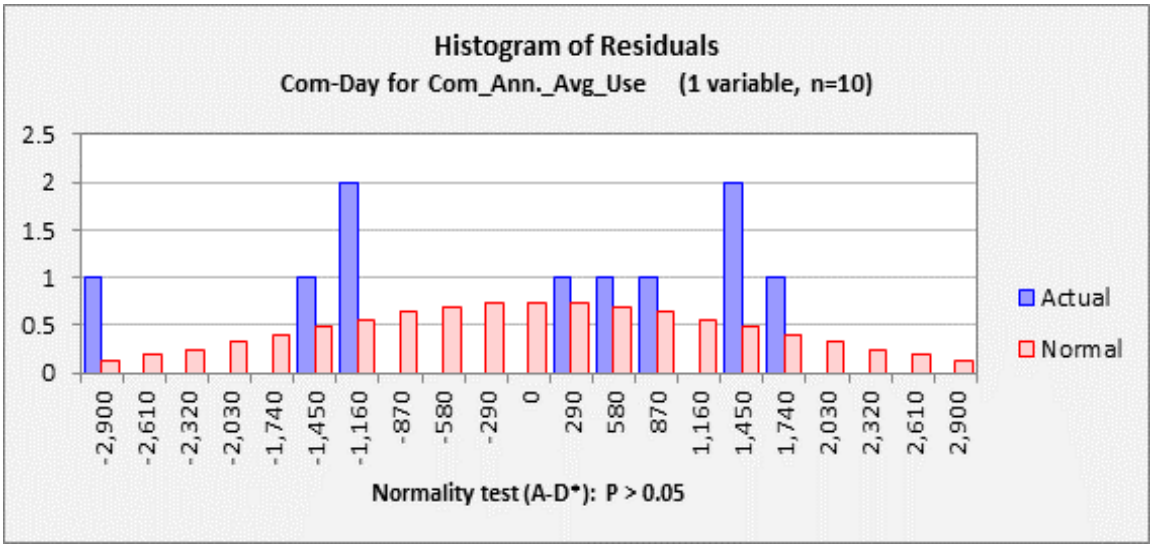
Residual -vs- Observation #



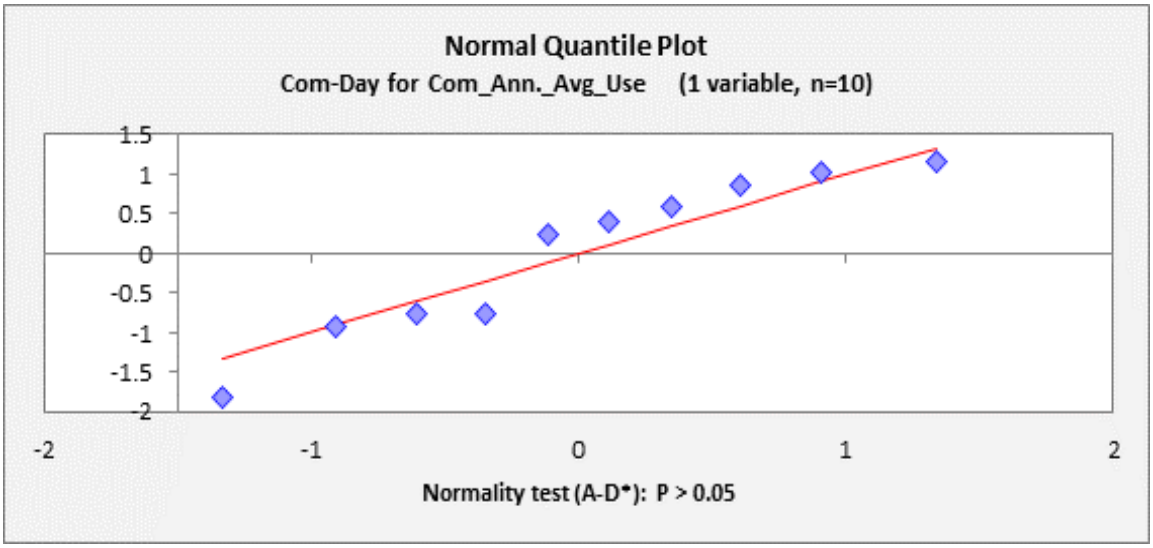
Residual -vs- Predicted



Histogram of Residuals



Normal Quantile Plot



Residual -vs- Independent Variable Plots

Kentucky American Water
Commercial Customer and Consumption Data
2008-2017

Decline/Cust/Month in Gallons: -360
Decline/Cust/Year in Gallons: -4327

Regression Formula (TIME): Predicted Com_Ann._Avg_Use = 77,075 - 0.987*Day

Annual Rate @ 2017: -1.04%

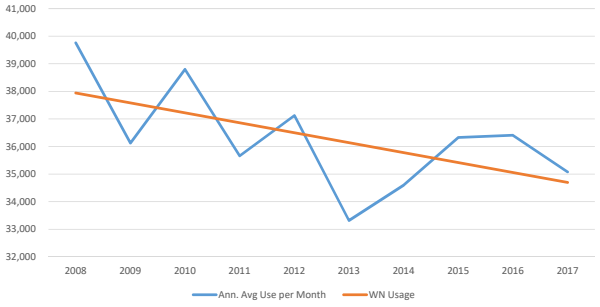
10-Year Study

Year	Day	Annual CDD	Annual HDD	May-Oct Precip	Commercial Avg Use per M	Weather Usage	WN Usage	Forecast
2008	39630	1,167	4,842	17	39,758	1,816.65	37,941.26	
2009	39995	999	4,694	35	36,125	(1,455.99)	37,580.83	
2010	40360	1,541	4,942	23	38,800	1,580.08	37,220.40	
2011	40725	1,265	4,447	29	35,660	(1,199.82)	36,859.97	
2012	41091	1,326	4,026	22	37,119	620.77	36,498.55	
2013	41456	1,216	4,695	35	33,317	(2,821.30)	36,138.13	
2014	41821	1,232	4,960	33	34,596	(1,181.75)	35,777.70	
2015	42186	1,244	4,365	26	36,325	907.38	35,417.27	
2016	42552	1,602	4,070	25	36,407	1,350.98	35,055.85	
2017	42917	1,253	3,786	31	35,078	383.00	34,695.42	
2018	43282							34,334.99
2019	43647							33,974.57
2020	44013							33,613.15
2021	44378							33,252.72
2022	44743							32,892.29

2007 for lag: **41583**

NORMALS	
CDD	1,285
HDD	4,483
Precip	27.5

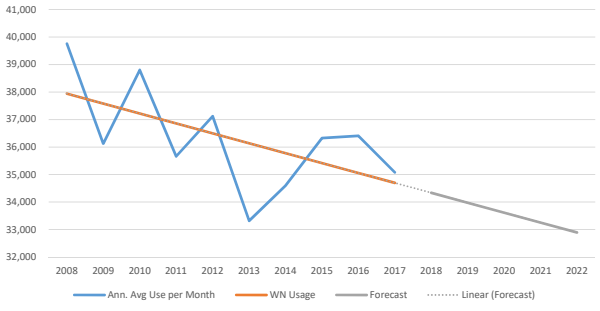
Figure GPR-3
KAWC Weather Normalize Commercial Annual Usage
Gallons Per Customer Month



Notes on Usage Data
2008-2016 from Hyperion
Jan 2017 - Dec 2017 from BI bill analysis report

Notes on Customer Count Data
Jan 2013 - Dec 2017 Customer Review file from 2018 rate case
Jan 2008 - Dec 2012 from Hyperion

Figure GPR-4
KAWC Weather Normalize Commercial Annual Usage Forecast
Gallons Per Customer Month



for lag variable

	DU vol	Cust	usage/cust
1/1/07	290628	8586	33849.0566
2/1/07	301707	8580	35163.98601
3/1/07	299133	8585	34843.68084
4/1/07	326225	8626	37818.80362
5/1/07	318056	8633	36841.88579
6/1/07	416839	8665	48106.05886
7/1/07	422337	8659	48774.33884
8/1/07	441543	8675	50898.32853
9/1/07	441072	8667	50890.96573
10/1/07	386105	8625	44765.7971
11/1/07	371618	8595	43236.53287
12/1/07	287753	8585	33518.11299
2007	4303016	8623.417	41582.66735

DATE	Day	USAGE (KGAL)	# Cust.	Monthly Usage Per Customer (G)	Monthly Annual Average Us	CDD	HDD	Precip	Tmax	Weather Normalize Trend
Jan-08	39448	293,186	8,586	34,147		0	1,015	4.42	40.50	38121
Feb-08	39479	308,863	8,579	36,002		0	856	5.76	43.20	38090
Mar-08	39508	273,046	8,574	31,846		0	647	6.30	54.10	38062
Apr-08	39539	285,176	8,739	32,633		13	326	5.90	64.80	38031
May-08	39569	328,985	8,749	37,603		31	146	4.41	71.60	38001
Jun-08	39600	348,645	8,747	39,859		266	0	3.59	84.20	37971
Jul-08	39630	385,002	8,741	44,046		328	0	3.42	86.30	37941
Aug-08	39661	475,002	8,778	54,113		295	0	2.18	86.00	37911
Sep-08	39692	434,480	8,793	49,412		196	2	1.42	83.10	37880
Oct-08	39722	408,662	8,788	46,502		38	280	1.54	69.10	37850
Nov-08	39753	348,298	8,766	39,733		0	665	2.53	52.10	37820
Dec-08	39783	272,722	8,741	31,200	39,758	0	905	6.04	45.60	37790
Jan-09	39814	299,134	8,731	34,261		0	1,134	4.33	36.60	37760
Feb-09	39845	292,818	8,716	33,596		0	763	2.54	47.30	37729
Mar-09	39873	270,719	8,722	31,039		0	528	2.39	57.80	37701
Apr-09	39904	299,767	8,769	34,185		38	322	4.78	65.60	37671
May-09	39934	300,658	8,793	34,193		78	92	6.03	73.60	37641
Jun-09	39965	330,056	8,810	37,464		268	10	5.19	82.90	37610
Jul-09	39995	375,128	8,801	42,623		219	4	7.57	80.30	37581
Aug-09	40026	373,756	8,797	42,487		257	3	4.54	82.20	37550
Sep-09	40057	351,819	8,809	39,939		133	29	5.90	76.80	37520
Oct-09	40087	341,095	8,794	38,787		6	373	5.78	61.80	37490
Nov-09	40118	287,454	8,749	32,856		0	510	0.96	57.40	37459
Dec-09	40148	280,930	8,760	32,070	36,125	0	926	4.03	42.50	37430
Jan-10	40179	293,784	8,716	33,706		0	1,137	3.02	35.10	37399
Feb-10	40210	260,798	8,700	29,977		0	1,013	1.61	35.80	37369
Mar-10	40238	263,667	8,717	30,247		0	567	1.14	56.10	37341
Apr-10	40269	325,570	8,741	37,246		36	202	2.31	71.60	37310
May-10	40299	301,446	8,769	34,376		130	73	9.95	75.70	37281
Jun-10	40330	369,379	8,797	41,989		348	0	4.59	86.10	37250
Jul-10	40360	390,880	8,798	44,428		403	0	6.06	87.50	37220
Aug-10	40391	381,942	8,805	43,378		406	0	0.58	89.20	37190
Sep-10	40422	457,201	8,814	51,872		201	31	0.61	83.80	37159
Oct-10	40452	395,602	8,800	44,955		17	212	1.24	72.00	37130
Nov-10	40483	337,398	8,780	38,428		0	544	4.46	58.00	37099
Dec-10	40513	306,830	8,766	35,002	38,800	0	1,163	2.50	33.40	37069
Jan-11	40544	305,980	8,757	34,941		0	1,132	2.04	35.30	37039
Feb-11	40575	265,364	8,722	30,425		0	744	6.23	47.90	37008
Mar-11	40603	263,461	8,717	30,224		4	575	4.69	55.50	36980
Apr-11	40634	287,371	8,739	32,884		21	225	12.70	68.80	36950
May-11	40664	284,422	8,754	32,491		115	150	6.45	72.70	36920
Jun-11	40695	320,484	8,777	36,514		251	0	3.20	83.30	36890
Jul-11	40725	381,325	8,784	43,411		443	0	4.93	89.10	36860
Aug-11	40756	370,420	8,784	42,170		317	0	3.64	85.90	36829
Sep-11	40787	406,635	8,778	46,324		109	86	5.98	74.80	36799
Oct-11	40817	316,467	8,767	36,098		5	326	4.41	65.60	36769
Nov-11	40848	282,188	8,757	32,224		0	456	7.68	58.80	36739
Dec-11	40878	263,942	8,735	30,217	35,660	0	753	4.43	48.60	36709
Jan-12	40909	269,823	8,718	30,950		0	857	3.54	47.40	36678
Feb-12	40940	266,899	8,704	30,664		0	724	3.10	49.10	36648
Mar-12	40969	264,838	8,709	30,410		32	303	3.31	66.90	36619
Apr-12	41000	278,195	8,758	31,765		15	288	2.30	67.60	36588
May-12	41030	300,959	8,786	34,254		148	34	3.61	79.70	36559
Jun-12	41061	369,936	8,813	41,976		240	18	1.61	85.20	36528
Jul-12	41091	428,411	8,834	48,496		479	0	8.02	92.20	36499
Aug-12	41122	436,207	8,833	49,384		286	0	2.15	85.30	36468
Sep-12	41153	386,630	8,842	43,727		121	77	5.41	76.70	36437
Oct-12	41183	347,453	8,902	39,031		5	337	1.28	63.40	36408
Nov-12	41214	314,825	8,897	35,385		0	668	1.76	54.10	36377
Dec-12	41244	260,756	8,872	29,391	37,119	0	720	6.56	49.00	36347
Jan-13	41275	251,945	8,864	28,423		0	911	4.46	43.50	36317
Feb-13	41306	272,502	8,863	30,746		0	837	1.53	44.40	36286
Mar-13	41334	268,888	8,874	30,301		0	789	5.35	48.30	36259
Apr-13	41365	262,279	8,893	29,493		28	300	4.88	66.90	36228
May-13	41395	240,263	8,846	27,161		120	83	5.66	75.70	36198
Jun-13	41426	365,046	8,843	41,281		261	0	7.54	83.70	36168
Jul-13	41456	339,430	8,854	38,336		296	0	9.10	83.20	36138
Aug-13	41487	351,075	8,979	39,100		310	3	5.14	84.30	36108
Sep-13	41518	332,194	8,988	36,960		159	20	1.63	80.30	36077
Oct-13	41548	315,866	8,957	35,265		42	269	6.23	67.80	36047
Nov-13	41579	293,449	8,923	32,887		0	648	2.45	53.40	36017
Dec-13	41609	266,267	8,920	29,851	33,317	0	835	5.58	45.70	35987
Jan-14	41640	308,935	8,917	34,646		0	1,181	2.31	37.50	35956
Feb-14	41671	313,008	8,894	35,193		0	915	4.73	41.00	35926
Mar-14	41699	273,784	8,869	30,870		0	721	2.89	53.30	35898
Apr-14	41730	294,882	8,872	33,237		13	212	6.00	69.90	35868
May-14	41760	263,329	8,884	29,641		139	92	5.44	77.90	35838
Jun-14	41791	343,810	8,882	38,709		297	0	5.59	84.40	35807
Jul-14	41821	332,078	8,884	37,379		260	2	3.23	83.70	35778
Aug-14	41852	340,803	8,946	38,096		337	0	9.58	85.20	35747
Sep-14	41883	337,470	8,950	37,706		161	30	4.35	80.30	35716
Oct-14	41913	374,847	8,927	41,990		25	226	4.48	68.00	35687
Nov-14	41944	247,863	8,908	27,825		0	764	2.37	48.40	35656
Dec-14	41974	266,053	8,910	29,860	34,596	0	817	3.30	45.40	35627
Jan-15	42005	293,149	8,902	32,931		0	1,049	1.85	40.10	35596
Feb-15	42036	250,618	8,901	28,156		0	1,118	3.00	34.60	35565
Mar-15	42064	286,757	8,903	32,209		0	655	7.46	54.20	35538
Apr-15	42095	318,071	8,902	35,730		11	265	11.41	67.20	35507
May-15	42125	306,489	8,912	34,391		152	61	2.07	79.00	35478
Jun-15	42156	359,653	8,925	40,297		280	18	5.64	83.30	35447
Jul-15	42186	360,509	8,945	40,303		341	0	9.66	84.90	35417
Aug-15	42217	355,492	8,950	39,720		247	0	2.19	83.90	35387
Sep-15	42248	380,412	8,947	42,518		193	16	2.72	82.50	35356
Oct-15	42278	384,177	8,937	42,987		17	242	3.45	68.10	35326
Nov-15	42309	323,138	8,943	36,133		3	440	3.23	60.20	35296
Dec-15	42339	272,577	8,931	30,520	36,325	0	501	7.22	56.80	35266
Jan-16	42370	289,610	8,942	32,388		0	1,025	1.24	41.00	35236

Feb-16	42401	271,968	8,944	30,408		0	775	4.46	47.00	35205
Mar-16	42430	287,139	8,974	31,997		2	402	2.80	62.10	35176
Apr-16	42461	302,784	9,000	33,643		24	267	3.31	68.50	35146
May-16	42491	297,687	9,016	33,018		81	142	6.49	72.80	35116
Jun-16	42522	335,616	9,020	37,208		305	1	4.56	86.20	35085
Jul-16	42552	366,416	9,030	40,578		411	0	4.98	87.40	35056
Aug-16	42583	377,696	9,064	41,670		424	0	6.54	87.60	35025
Sep-16	42614	393,311	9,042	43,498		265	18	1.67	85.30	34995
Oct-16	42644	373,340	9,022	41,381		76	120	0.83	75.10	34965
Nov-16	42675	339,859	9,000	37,762		14	458	1.34	62.20	34934
Dec-16	42705	300,158	9,005	33,332	36,407	0	862	6.18	45.30	34905
Jan-17	42736	215,394	8,996	23,943		0	767	4.72	47.10	34874
Feb-17	42767	340,140	9,001	37,789		3	511	3.39	57.40	34844
Mar-17	42795	263,204	9,013	29,203		5	537	3.29	58.60	34816
Apr-17	42826	270,993	9,072	29,871		62	138	1.85	72.60	34785
May-17	42856	309,894	9,088	34,099		119	102	5.64	75.50	34756
Jun-17	42887	356,416	9,106	39,141		235	6	5.78	83.60	34725
Jul-17	42917	380,671	9,111	41,781		379	0	5.24	86.70	34695
Aug-17	42948	370,939	9,126	40,646		249	0	5.07	83.00	34665
Sep-17	42979	388,526	9,128	42,564		140	38	3.74	78.80	34634
Oct-17	43009	335,198	9,103	36,823		55	221	5.76	70.60	34605
Nov-17	43040	317,267	9,090	34,903		6	535	2.35	57.10	34574
Dec-17	43070	274,098	9,083	30,177	35,078	0	931	2.38	44.30	34544
7/1/2018	43282									34335
7/1/2019	43647									33975
7/1/2020	44013									33613
7/1/2021	44378									33253
7/1/2022	44743									32892

Decline/Cust/Month in Gallons	-360
Decline/Cust/Year in Gallons	-4327
Annual Rate @ 2017	**-1.04%**

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Gregory P. Roach

21. Refer to Kentucky-American's Response to Staff's Second Request, Item 26.

a. In the approach to forecasting usage, provide the different independent variables that were used in the regression model and explain why different variables were chosen.

b. Explain why Kentucky-American changed from a cross sectional to a time series model.

Response:

a. For the residential class, this information is detailed in Mr. Roach's direct testimony beginning on page 6 and the climatic variables explored are listed in Table GPR-1, page 7. For the commercial class this information is detailed in Mr. Roach's direct testimony beginning on page 9 and the climatic variables explored are listed in Table GPR-2, page 11.

b. A cross sectional analysis is defined as an observational research type that analyzes data of variables collected at one given point of time. As such, it is generally acknowledged that such an analysis is not best suited for measuring changes over time. It is generally acknowledged in the water industry that there is a trend of declining usage of water. In order to measure that trend, which is essential for rate case forecasting purposes, KAWC has chosen to employ a time series model in this proceeding because that methodology has the higher statistical significance and hence capability to explain the relationship between usage per customer over time as impacted by annual climatic conditions.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Gregory P. Roach

22. Refer to the Roach Testimony, page 2, line 20. Provide the data relied on and all calculations used to determine the 987 gallons per residential customer per year trend. State the source for the data provided in Kentucky-American's response.

Response:

Please see KAW_R_PSCDR3_NUM22_030119_Attachment_Residential_1 and KAW_R_PSCDR3_NUM22_030119_Attachment_Residential_2 for all data and calculations. A listing of the sources of that data are identified in Mr. Roach's direct testimony on page 3, beginning at line 15.

Model: Day.MayOPrecip
Dependent Variable: Res_Ann._Avg_Use
Independent Variables:
Day, May_Oct_Precip
Equation:
Predicted Res_Ann._Avg_Use = 14,341 - 0.225*Day - 21.803*May_Oct_Precip

R-Squared	Adj.R-Sqr.	Std.Err.Reg.	Std.Dep.Var.	# Fitted	# Missing	t(2.50%,7)	Confidence
0.976	0.969	56.405	320.125	10	0	2.365	95.0%

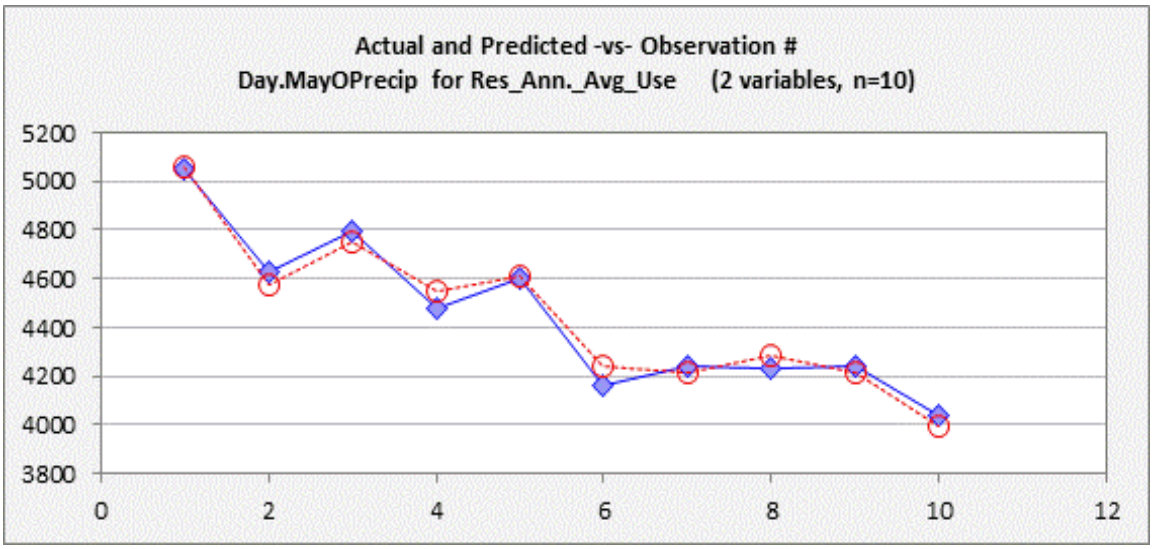
Variable	Coefficient	Std.Err.	t-Statistic	P-value	Lower95%	Upper95%	VIF	Std. Coeff.
Constant	14,341	714.835	20.062	0.000	12,651	16,031	0.000	0.000
Day	-0.225	0.018	-12.618	0.000	-0.267	-0.183	1.102	-0.778
May_Oct_Precip	-21.803	3.224	-6.762	0.000	-29.426	-14.179	1.102	-0.417

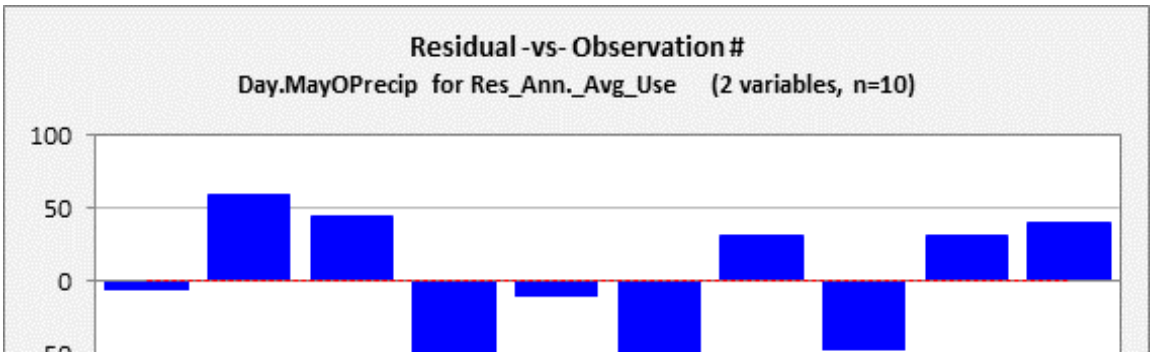
Source	Deg. Freedom	Sum Squares	Mean Square	F-Statistic	P-value
Regression	2	900,051	450,026	141.448	0.000
Residual	7	22,271	3,182		
Total	9	922,322			

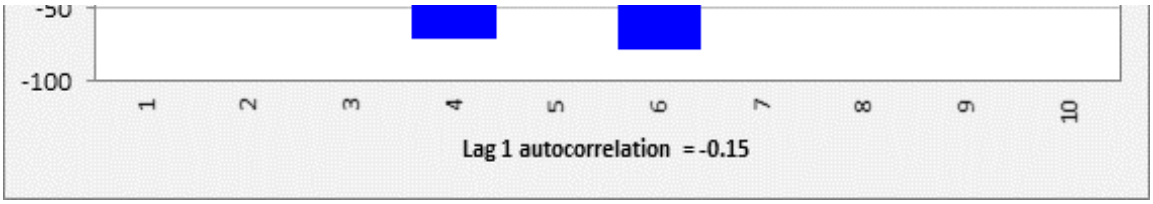
	Mean Error	RMSE	MAE	Minimum	Maximum	MAPE	A-D* stat	MASE lag 1
Fitted (n=10)	0.000	47.192	41.614	-77.144	59.902	1.0%	0.50 (P=0.204)	0.212

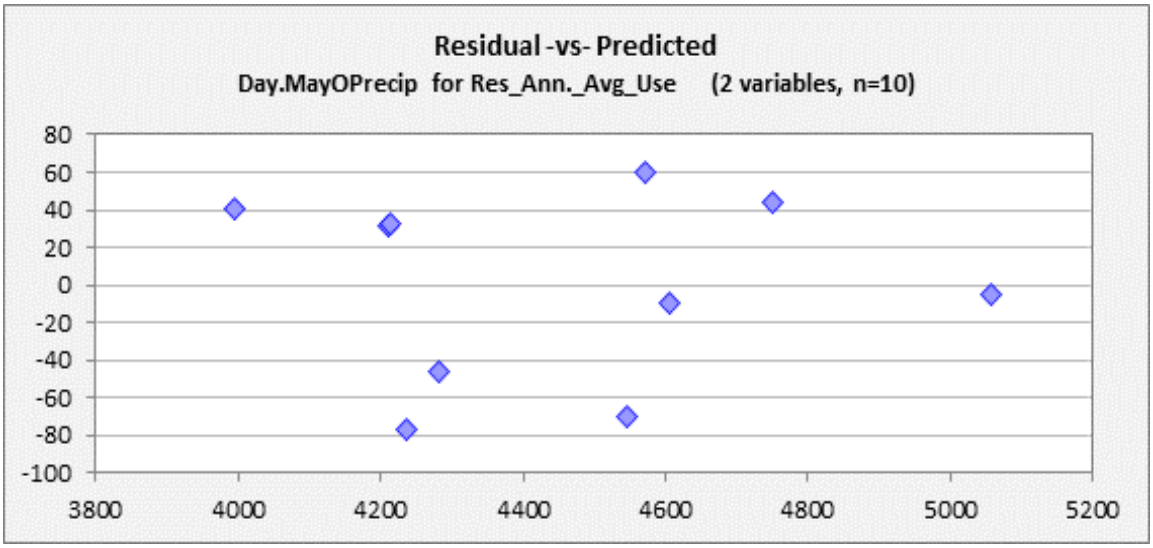
Lag	1
Autocorrelation	-0.153
StdErrorsFromZero	-0.459
Durbin-Watson	2.232

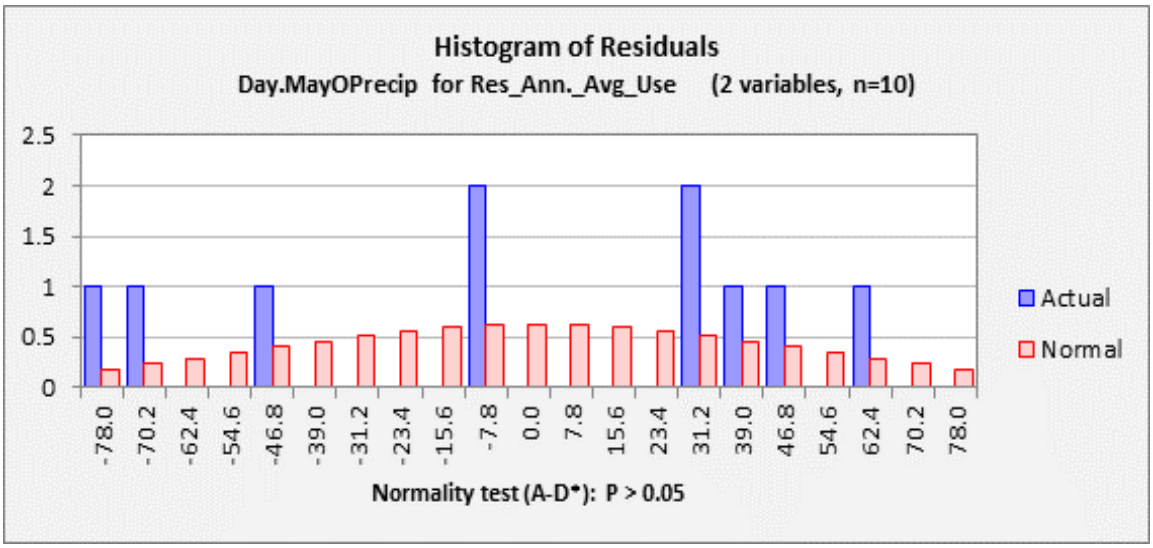
4 minus:
1.768 DW upper = 1.641

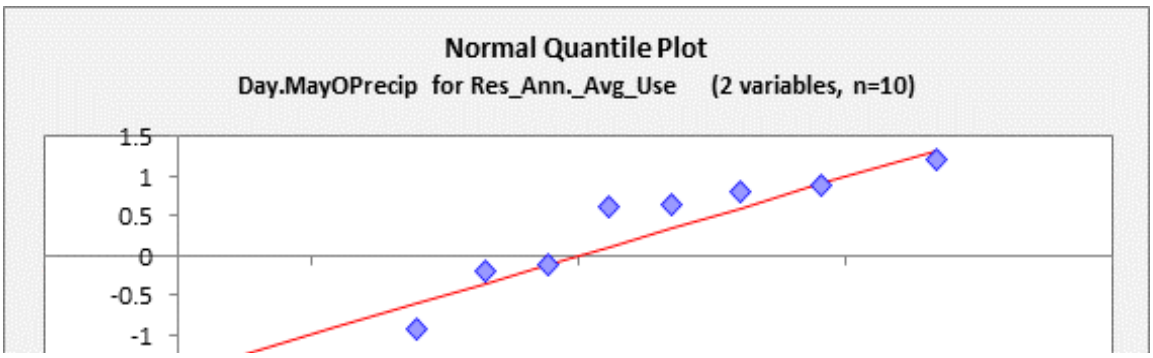


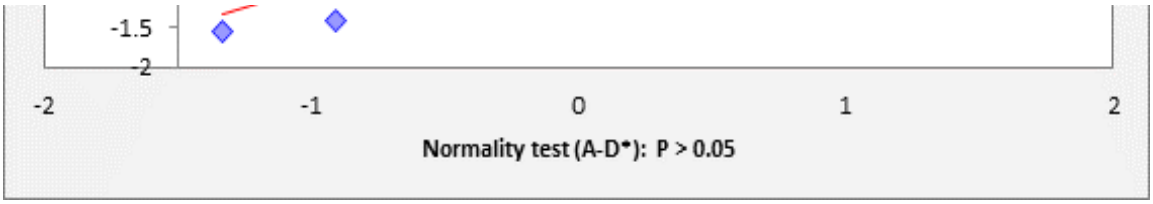



-50
-100
1
2
3
4
5
6
7
8
9
10
Lag 1 autocorrelation = -0.15


Residual -vs- Predicted
Day.MayOPrecip for Res_Ann._Avg_Use (2 variables, n=10)
80
60
40
20
0
-20
-40
-60
-80
-100
3800
4000
4200
4400
4600
4800
5000
5200


Histogram of Residuals
Day.MayOPrecip for Res_Ann._Avg_Use (2 variables, n=10)
2.5
2
1.5
1
0.5
0
-78.0
-70.2
-62.4
-54.6
-46.8
-39.0
-31.2
-23.4
-15.6
-7.8
0.0
7.8
15.6
23.4
31.2
39.0
46.8
54.6
62.4
70.2
78.0
Actual
Normal
Normality test (A-D*): P > 0.05


Normal Quantile Plot
Day.MayOPrecip for Res_Ann._Avg_Use (2 variables, n=10)
1.5
1
0.5
0
-0.5
-1


-1.5
-2
-2
-1
0
1
2
Normality test (A-D*): P > 0.05

Kentucky American Water
Residential Customer and Consumption Data
2008-2017

Decline/Cust/Month in Gallons: -82
Decline/Cust/Year in Gallons: -987

Regression Formula (TIME): **Predicted Res_Ann._Avg_Use = 14,341 - 0.225*Day - 21.803*May_Oct_Precip**

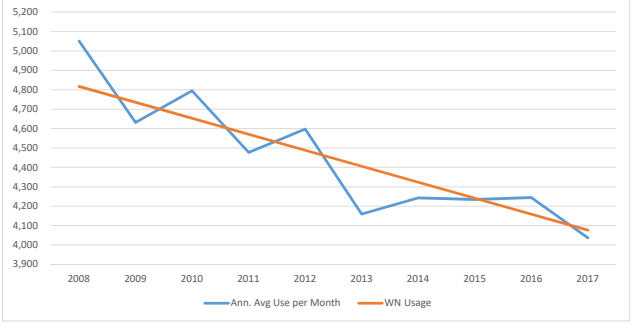
Annual Rate @ 2017: **-2.02%**

10-Year Study

Year	Day	Annual CDD	Annual HDD	May-Oct Precip	Residential Avg Use per M	Weather Usage	WN Usage	Forecast
2008	39630	1,167	4,842	17	5,051	233.90	4,816.96	
2009	39995	999	4,694	35	4,632	(103.20)	4,734.77	
2010	40360	1,541	4,942	23	4,795	142.29	4,652.57	
2011	40725	1,265	4,447	29	4,477	(93.29)	4,570.38	
2012	41091	1,326	4,026	22	4,597	109.16	4,487.96	
2013	41456	1,216	4,695	35	4,159	(246.57)	4,405.77	
2014	41821	1,232	4,960	33	4,243	(80.62)	4,323.58	
2015	42186	1,244	4,365	26	4,234	(7.08)	4,241.39	
2016	42552	1,602	4,070	25	4,245	85.76	4,158.97	
2017	42917	1,253	3,786	31	4,036	(40.33)	4,076.78	
2018	43282							3,994.59
2019	43647							3,912.40
2020	44013							3,829.98
2021	44378							3,747.79
2022	44743							3,665.60

NORMALS	
CDD	1,285
HDD	4,483
Precip	27.5

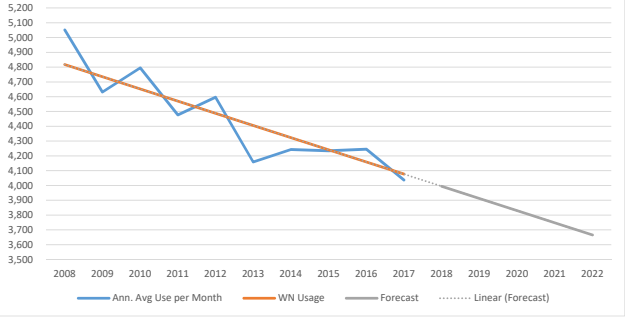
Figure GPR-1
KAWC Weather Normalize Residential Annual Usage
Gallons Per Customer Month



Notes on Usage Data
2008-2016 Hyperion
Jan 2017 - Dec 2017 from BI bill analysis report

Notes on Customer Count Data
Jan 2013 - Dec 2017 Customer Review file from 2018 rate case
Jan 2008 - Dec 2012 from Hyperion

Figure GPR-2
KAWC Weather Normalize Residential Annual Usage Forecast
Gallons Per Customer Month



DATE	Day	USAGE (KGAL)	# Cust.	Monthly Usag r Customer	Monthly Annual Average Use	CDD	HDD	Precip	Tmax	Weather Normalize Trend
Jan-08	39448	480,523	106,086	4,530		0	1,015	4.42	40.50	4858
Feb-08	39479	479,531	106,072	4,521		0	856	5.76	43.20	4851
Mar-08	39508	423,595	106,293	3,985		0	647	6.30	54.10	4844
Apr-08	39539	427,034	106,292	4,018		13	326	5.90	64.80	4837
May-08	39569	486,806	106,529	4,570		31	146	4.41	71.60	4831
Jun-08	39600	560,973	106,581	5,263		266	0	3.59	84.20	4824
Jul-08	39630	618,820	106,814	5,793		328	0	3.42	86.30	4817
Aug-08	39661	718,147	107,224	6,698		295	0	2.18	86.00	4810
Sep-08	39692	685,000	107,195	6,390		196	2	1.42	83.10	4803
Oct-08	39722	627,618	107,161	5,857		38	280	1.54	69.10	4796
Nov-08	39753	511,454	107,082	4,776		0	665	2.53	52.10	4789
Dec-08	39783	450,080	106,913	4,210	5,051	0	905	6.04	45.60	4783
Jan-09	39814	518,666	106,914	4,851		0	1,134	4.33	36.60	4776
Feb-09	39845	451,117	106,974	4,217		0	763	2.54	47.30	4769
Mar-09	39873	425,317	107,009	3,975		0	528	2.39	57.80	4762
Apr-09	39904	460,127	107,178	4,293		38	322	4.78	65.60	4755
May-09	39934	457,125	107,311	4,260		78	92	6.03	73.60	4749
Jun-09	39965	534,248	107,362	4,976		268	10	5.19	82.90	4742
Jul-09	39995	601,846	107,379	5,605		219	4	7.57	80.30	4735
Aug-09	40026	559,318	107,642	5,196		257	3	4.54	82.20	4728
Sep-09	40057	547,107	107,598	5,085		133	29	5.90	76.80	4721
Oct-09	40087	503,632	107,654	4,678		6	373	5.78	61.80	4714
Nov-09	40118	445,416	107,596	4,140		0	510	0.96	57.40	4707
Dec-09	40148	462,586	107,500	4,303	4,632	0	926	4.03	42.50	4700
Jan-10	40179	496,208	107,578	4,613		0	1,137	3.02	35.10	4693
Feb-10	40210	417,139	107,757	3,871		0	1,013	1.61	35.80	4686
Mar-10	40238	424,449	107,860	3,935		0	567	1.14	56.10	4680
Apr-10	40269	494,117	108,117	4,570		36	202	2.31	71.60	4673
May-10	40299	458,240	108,241	4,234		130	73	9.95	75.70	4666
Jun-10	40330	521,307	108,223	4,817		348	0	4.59	86.10	4659
Jul-10	40360	616,630	108,325	5,692		403	0	6.06	87.50	4653
Aug-10	40391	581,015	108,424	5,359		406	0	0.58	89.20	4646
Sep-10	40422	663,809	108,472	6,120		201	31	0.61	83.80	4639
Oct-10	40452	625,130	108,347	5,770		17	212	1.24	72.00	4632
Nov-10	40483	509,493	108,291	4,705		0	544	4.46	58.00	4625
Dec-10	40513	417,678	108,389	3,854	4,795	0	1,163	2.50	33.40	4618
Jan-11	40544	537,690	108,446	4,958		0	1,132	2.04	35.30	4611
Feb-11	40575	414,342	108,390	3,823		0	744	6.23	47.90	4604
Mar-11	40603	410,416	108,590	3,779		4	575	4.69	55.50	4598
Apr-11	40634	439,334	108,838	4,037		21	225	12.70	68.80	4591
May-11	40664	440,770	109,038	4,042		115	150	6.45	72.70	4584
Jun-11	40695	535,835	109,020	4,915		251	0	3.20	83.30	4577
Jul-11	40725	592,652	109,105	5,432		443	0	4.93	89.10	4570
Aug-11	40756	548,956	109,295	5,023		317	0	3.64	85.90	4563
Sep-11	40787	603,405	109,354	5,518		109	86	5.98	74.80	4556
Oct-11	40817	477,737	109,302	4,371		5	326	4.41	65.60	4550
Nov-11	40848	421,793	109,207	3,862		0	456	7.68	58.80	4543
Dec-11	40878	432,483	109,071	3,965	4,477	0	753	4.43	48.60	4536
Jan-12	40909	462,037	109,285	4,228		0	857	3.54	47.40	4529
Feb-12	40940	410,877	109,508	3,752		0	724	3.10	49.10	4522
Mar-12	40969	413,697	109,782	3,768		32	303	3.31	66.90	4515
Apr-12	41000	432,461	110,019	3,931		15	288	2.30	67.60	4508
May-12	41030	455,249	110,165	4,132		148	34	3.61	79.70	4502
Jun-12	41061	622,767	110,453	5,638		240	18	1.61	85.20	4495
Jul-12	41091	724,137	110,556	6,550		479	0	8.02	92.20	4488
Aug-12	41122	658,716	110,784	5,946		286	0	2.15	85.30	4481
Sep-12	41153	532,256	110,879	4,800		121	77	5.41	76.70	4474
Oct-12	41183	506,468	111,366	4,548		5	337	1.28	63.40	4467
Nov-12	41214	461,480	111,417	4,142		0	668	1.76	54.10	4460
Dec-12	41244	415,717	111,457	3,730	4,597	0	720	6.56	49.00	4454
Jan-13	41275	466,325	110,286	4,228		0	911	4.46	43.50	4447
Feb-13	41306	434,074	110,430	3,931		0	837	1.53	44.40	4440
Mar-13	41334	405,078	110,601	3,663		0	789	5.35	48.30	4433
Apr-13	41365	418,930	110,770	3,782		28	300	4.88	66.90	4426
May-13	41395	455,956	112,842	4,041		120	83	5.66	75.70	4420
Jun-13	41426	528,796	112,909	4,683		261	0	7.54	83.70	4413
Jul-13	41456	475,444	112,957	4,209		296	0	9.10	83.20	4406
Aug-13	41487	529,828	113,608	4,664		310	3	5.14	84.30	4399
Sep-13	41518	512,147	113,783	4,501		159	20	1.63	80.30	4392
Oct-13	41548	528,595	113,723	4,648		42	269	6.23	67.80	4385
Nov-13	41579	400,534	113,691	3,523		0	648	2.45	53.40	4378
Dec-13	41609	459,418	113,777	4,038	4,159	0	835	5.58	45.70	4371
Jan-14	41640	493,103	113,816	4,332		0	1,181	2.31	37.50	4364
Feb-14	41671	493,795	113,795	4,339		0	915	4.73	41.00	4357
Mar-14	41699	437,161	113,580	3,849		0	721	2.89	53.30	4351
Apr-14	41730	446,063	113,585	3,927		13	212	6.00	69.90	4344
May-14	41760	452,219	113,550	3,983		139	92	5.44	77.90	4337
Jun-14	41791	522,245	113,659	4,595		297	0	5.59	84.40	4330
Jul-14	41821	581,709	113,591	5,121		260	2	3.23	83.70	4324
Aug-14	41852	516,761	114,292	4,521		337	0	9.58	85.20	4317
Sep-14	41883	516,726	114,408	4,517		161	30	4.35	80.30	4310
Oct-14	41913	510,909	114,505	4,462		25	226	4.48	68.00	4303
Nov-14	41944	386,993	114,440	3,382		0	764	2.37	48.40	4296
Dec-14	41974	445,274	114,534	3,888	4,243	0	817	3.30	45.40	4289
Jan-15	42005	496,999	114,636	4,335		0	1,049	1.85	40.10	4282
Feb-15	42036	409,081	114,766	3,564		0	1,118	3.00	34.60	4275
Mar-15	42064	472,025	115,014	4,104		0	655	7.46	54.20	4269
Apr-15	42095	461,866	115,157	4,011		11	265	11.41	67.20	4262
May-15	42125	444,309	115,174	3,858		152	61	2.07	79.00	4255
Jun-15	42156	563,334	115,527	4,876		280	18	5.64	83.30	4248
Jul-15	42186	513,500	115,691	4,439		341	0	9.66	84.90	4241
Aug-15	42217	518,053	115,882	4,471		247	0	2.19	83.90	4234
Sep-15	42248	574,523	116,068	4,950		193	16	2.72	82.50	4227
Oct-15	42278	541,831	116,091	4,667		17	242	3.45	68.10	4221
Nov-15	42309	425,337	116,144	3,662		3	440	3.23	60.20	4214

Dec-15	42339	450,092	116,165	3,875	4,234	0	501	7.22	56.80	4207
Jan-16	42370	438,318	116,124	3,775		0	1,025	1.24	41.00	4200
Feb-16	42401	430,536	116,263	3,703		0	775	4.46	47.00	4193
Mar-16	42430	431,088	116,397	3,704		2	402	2.80	62.10	4186
Apr-16	42461	464,312	116,599	3,982		24	267	3.31	68.50	4179
May-16	42491	436,240	116,819	3,734		81	142	6.49	72.80	4173
Jun-16	42522	543,599	116,944	4,648		305	1	4.56	86.20	4166
Jul-16	42552	556,625	116,893	4,762		411	0	4.98	87.40	4159
Aug-16	42583	565,559	117,139	4,828		424	0	6.54	87.60	4152
Sep-16	42614	566,648	117,276	4,832		265	18	1.67	85.30	4145
Oct-16	42644	549,271	117,385	4,679		76	120	0.83	75.10	4138
Nov-16	42675	501,169	117,324	4,272		14	458	1.34	62.20	4131
Dec-16	42705	471,584	117,366	4,018	4,245	0	862	6.18	45.30	4125
Jan-17	42736	467,875	117,337	3,987		0	767	4.72	47.10	4118
Feb-17	42767	421,264	117,359	3,590		3	511	3.39	57.40	4111
Mar-17	42795	403,788	117,658	3,432		5	537	3.29	58.60	4104
Apr-17	42826	426,740	117,991	3,617		62	138	1.85	72.60	4097
May-17	42856	464,428	118,171	3,930		119	102	5.64	75.50	4091
Jun-17	42887	536,481	118,262	4,536		235	6	5.78	83.60	4084
Jul-17	42917	535,084	118,218	4,526		379	0	5.24	86.70	4077
Aug-17	42948	541,171	118,378	4,572		249	0	5.07	83.00	4070
Sep-17	42979	552,157	118,437	4,662		140	38	3.74	78.80	4063
Oct-17	43009	489,137	118,485	4,128		55	221	5.76	70.60	4056
Nov-17	43040	452,419	118,442	3,820		6	535	2.35	57.10	4049
Dec-17	43070	430,850	118,448	3,637	4,036	0	931	2.38	44.30	4042

7/1/2018	43282	3995
7/1/2019	43647	3912
7/1/2020	44013	3830
7/1/2021	44378	3748
7/1/2022	44743	3666

Decline/Cust/Month in Gallons	-82
Decline/Cust/Year in Gallons	-987
Annual Rate @ 2017	**-2.02%**

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Gregory P. Roach

23. Refer to the Roach Testimony, page 2, line 22. Provide the data relied on and all calculations used to determine the 2,522 gallons per commercial customer per year trend. State the source for the data provided in Kentucky-American's response.

Response:

Please see KAW_R_PSCDR3_NUM23_030119_Attachment_Commercial_1 and KAW_R_PSCDR3_NUM23_030119_Attachment_Commercial_2 for all data and calculations. For sources of data, please see Mr. Roach's direct testimony at page 3, beginning at line 15.

Model: Day.MayOctPrecipLag1
Dependent Variable: Com_Ann._Avg_Use
Independent Variables:
ComLag1, Day, May_Oct_Precip
Equation:
Predicted Com_Ann._Avg_Use = 66,448 + 0.004822*ComLag1 - 0.573*Day - 242.213*May_Oct_Precip

R-Squared	Adj.R-Sqr.	Std.Err.Reg.	Std.Dep.Var.	# Fitted	# Missing	t(2.50%,6)	Confidence
0.879	0.819	809.472	1,904	10	0	2.447	95.0%

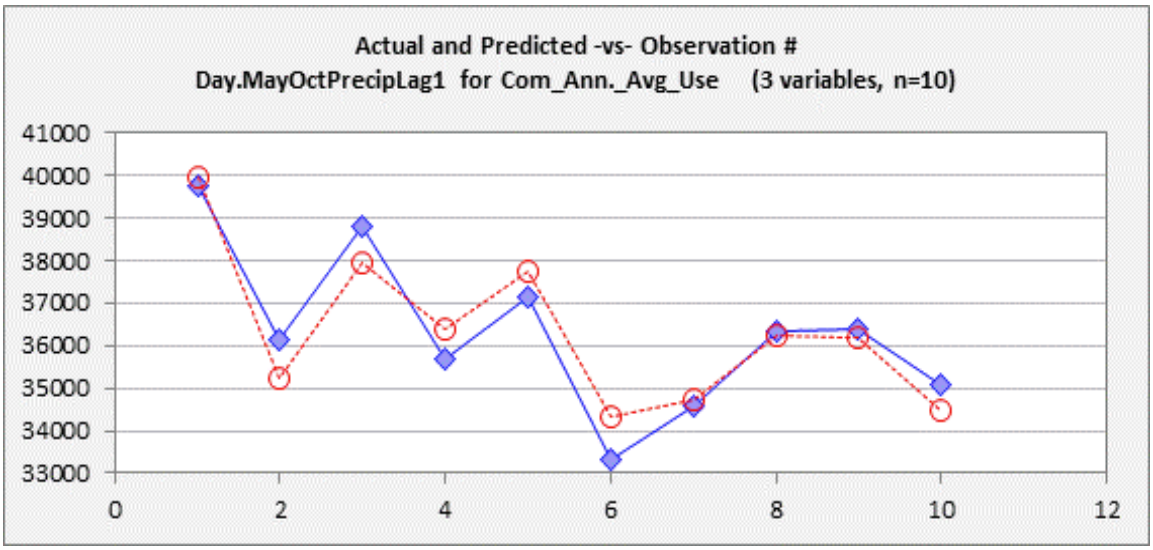
Variable	Coefficient	Std.Err.	t-Statistic	P-value	Lower95%	Upper95%	VIF	Std. Coeff.
Constant	66,448	18,441	3.603	0.011	21,324	111,572	0.000	0.000
ComLag1	0.004822	0.152	0.032	0.976	-0.368	0.378	1.934	0.006236
Day	-0.573	0.347	-1.651	0.150	-1.422	0.276	2.022	-0.333
May_Oct_Precip	-242.213	46.280	-5.234	0.002	-355.456	-128.969	1.102	-0.779

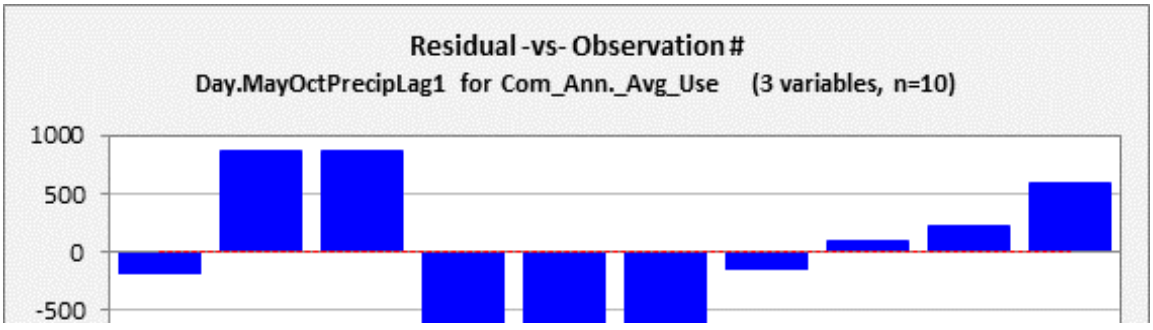
Source	Deg. Freedom	Sum Squares	Mean Square	F-Statistic	P-value
Regression	3	28,693,414	9,564,471	14.597	0.004
Residual	6	3,931,467	655,245		
Total	9	32,624,881			

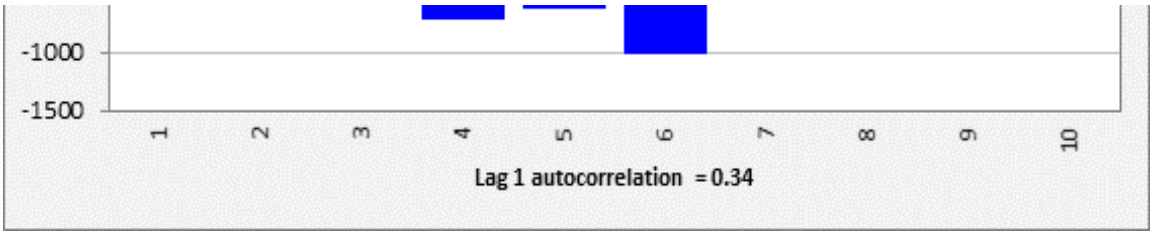
	Mean Error	RMSE	MAE	Minimum	Maximum	MAPE	A-D* stat	MASE lag 1
Fitted (n=10)	0.000	627.014	535.823	-1,016	873.185	1.5%	0.24 (P=0.779)	0.252

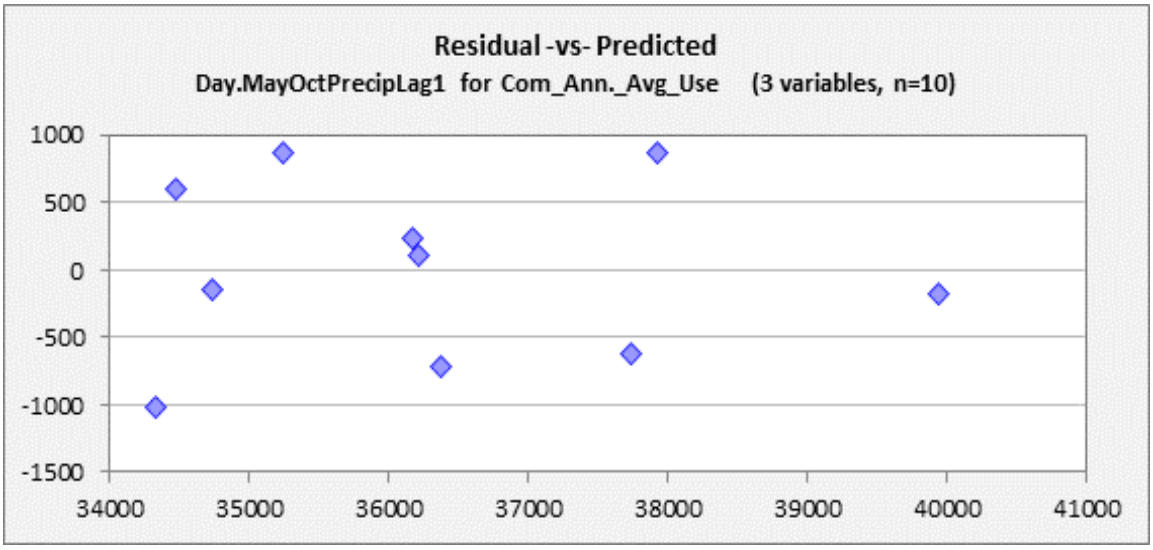
Lag	1
Autocorrelation	0.341
StdErrorsFromZero	1.023

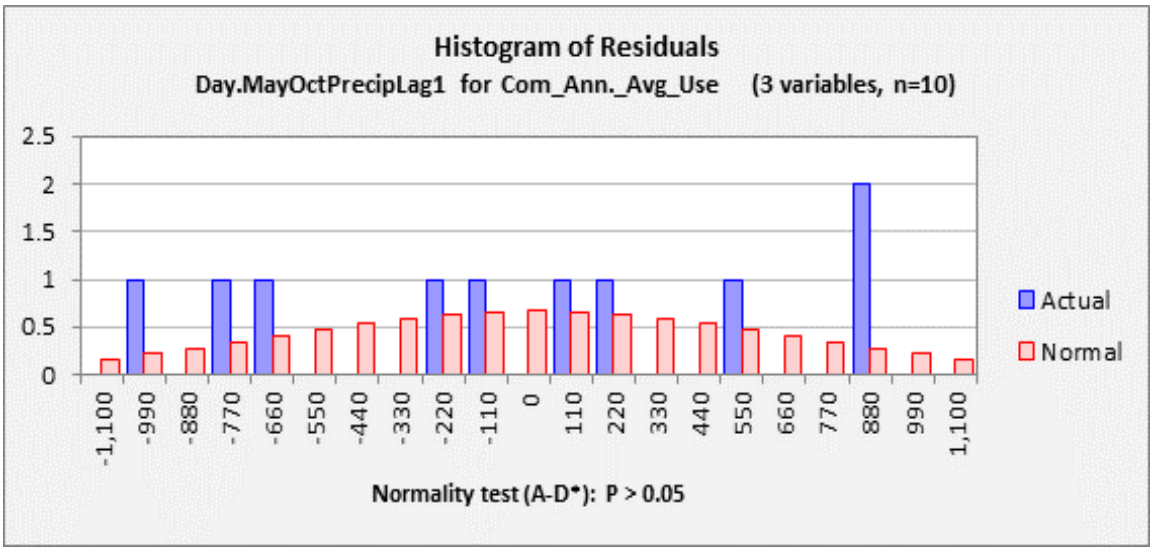
Durbin-Watson 1.218 Durbin H 1.411 critical H (for 5% significance) = -1.96 or 1.96

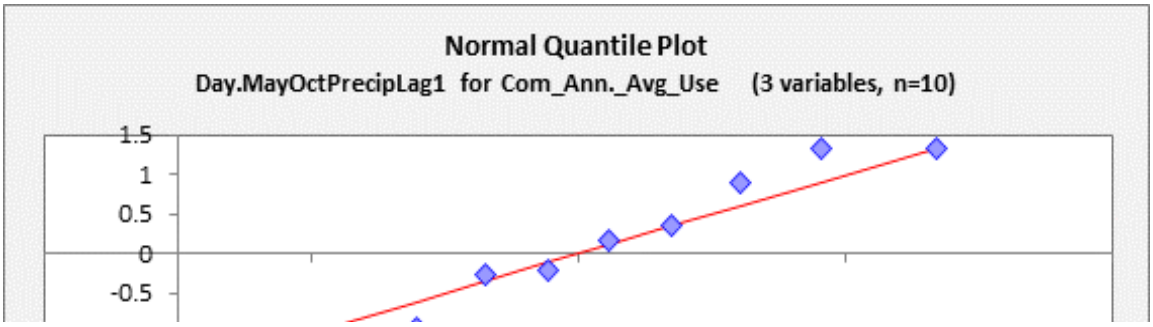


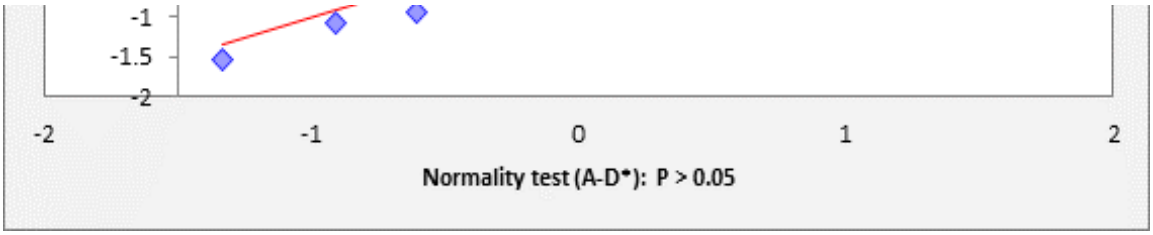



-1000
-1500
1
2
3
4
5
6
7
8
9
10
Lag 1 autocorrelation = 0.34


Residual -vs- Predicted
Day.MayOctPrecipLag1 for Com_Ann._Avg_Use (3 variables, n=10)
1000
500
0
-500
-1000
-1500
34000
35000
36000
37000
38000
39000
40000
41000


Histogram of Residuals
Day.MayOctPrecipLag1 for Com_Ann._Avg_Use (3 variables, n=10)
2.5
2
1.5
1
0.5
0
-1,100
-990
-880
-770
-660
-550
-440
-330
-220
-110
0
110
220
330
440
550
660
770
880
990
1,100
Actual
Normal
Normality test (A-D*): P > 0.05


Normal Quantile Plot
Day.MayOctPrecipLag1 for Com_Ann._Avg_Use (3 variables, n=10)
1.5
1
0.5
0
-0.5


-1
-1.5
-2
-2
-1
0
1
2
Normality test (A-D*): P > 0.05

Kentucky American Water
Commercial Customer and Consumption Data
2008-2017

Decline/Cust/Month in Gallons: -210
Decline/Cust/Year in Gallons: -2522

Regression Formula (TIME): Predicted Com_Ann._Avg_Use = 66,448 + 0.004822*ComLag1 - 0.573*Day - 242.213*May_Oct_Precip

Annual Rate @ 2017: -0.59%

10-Year Study

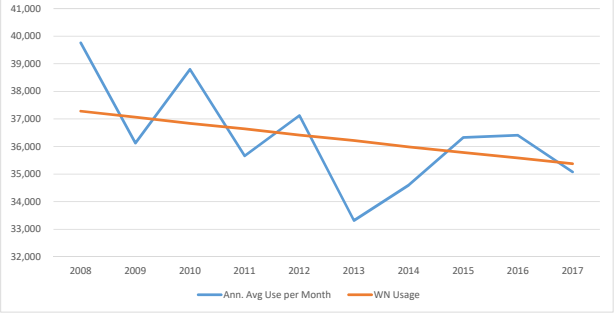
Year	Day	Annual CDD	Annual HDD	May-Oct Precip	Commercial Avg Use per M	Weather Usage	WN Usage	Forecast
2008	39630	1,167	4,842	17	39,758	2,475.90	37,282.01	
2009	39995	999	4,694	35	36,125	(939.32)	37,064.15	
2010	40360	1,541	4,942	23	38,800	1,962.90	36,837.58	
2011	40725	1,265	4,447	29	35,660	(981.27)	36,641.42	
2012	41091	1,326	4,026	22	37,119	702.69	36,416.64	
2013	41456	1,216	4,695	35	33,317	(2,897.79)	36,214.62	
2014	41821	1,232	4,960	33	34,596	(1,391.27)	35,987.22	
2015	42186	1,244	4,365	26	36,325	540.32	35,784.33	
2016	42552	1,602	4,070	25	36,407	823.80	35,583.03	
2017	42917	1,253	3,786	31	35,078	(295.95)	35,374.37	
2018	43282							35,160.31
2019	43647							34,950.24
2020	44013							34,739.59
2021	44378							34,529.51
2022	44743							34,319.44

2007 for lag: **41583**

NORMALS

CDD	1,285
HDD	4,483
Precip	27.5

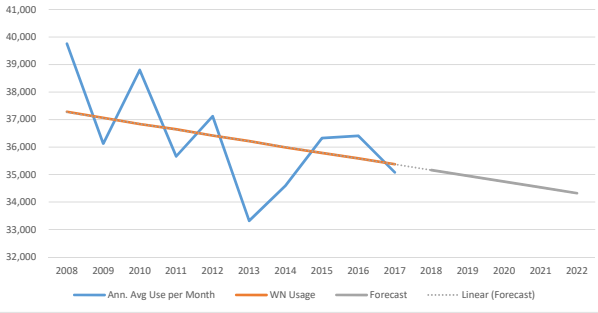
Figure GPR-3
KAWC Weather Normalize Commercial Annual Usage
Gallons Per Customer Month



Notes on Usage Data
2008-2016 from Hyperion
Jan 2017 - Dec 2017 from BI bill analysis report

Notes on Customer Count Data
Jan 2013 - Dec 2017 Customer Review file from 2018 rate case
Jan 2008 - Dec 2012 from Hyperion

Figure GPR-4
KAWC Weather Normalize Commercial Annual Usage Forecast
Gallons Per Customer Month



for lag variable

	DU vol	Cust	usage/cust
1/1/07	290628	8586	33849.0566
2/1/07	301707	8580	35163.98601
3/1/07	299133	8585	34843.68084
4/1/07	326225	8626	37818.80362
5/1/07	318056	8633	36841.88579
6/1/07	416839	8665	48106.05886
7/1/07	422337	8659	48774.33884
8/1/07	441543	8675	50898.32853
9/1/07	441072	8667	50890.96573
10/1/07	386105	8625	44765.7971
11/1/07	371618	8595	43236.53287
12/1/07	287753	8585	33518.11299
2007	4303016	8623.417	41582.66735

DATE	Day	USAGE (KGAL)	# Cust.	Monthly Usage Per Customer (G)	Monthly Annual Average Us	CDD	HDD	Precip	Tmax	Weather Normalize Trend
Jan-08	39448	293,186	8,586	34,147		0	1,015	4.42	40.50	37349
Feb-08	39479	308,863	8,579	36,002		0	856	5.76	43.20	37338
Mar-08	39508	273,046	8,574	31,846		0	647	6.30	54.10	37319
Apr-08	39539	285,176	8,739	32,633		13	326	5.90	64.80	37316
May-08	39569	328,985	8,749	37,603		31	146	4.41	71.60	37294
Jun-08	39600	348,645	8,747	39,859		266	0	3.59	84.20	37331
Jul-08	39630	385,002	8,741	44,046		328	0	3.42	86.30	37317
Aug-08	39661	475,002	8,778	54,113		295	0	2.18	86.00	37309
Sep-08	39692	434,480	8,793	49,412		196	2	1.42	83.10	37291
Oct-08	39722	408,662	8,788	46,502		38	280	1.54	69.10	37245
Nov-08	39753	348,298	8,766	39,733		0	665	2.53	52.10	37220
Dec-08	39783	272,722	8,741	31,200	39,758	0	905	6.04	45.60	37155
Jan-09	39814	299,134	8,731	34,261		0	1,134	4.33	36.60	37156
Feb-09	39845	292,818	8,716	33,596		0	763	2.54	47.30	37138
Mar-09	39873	270,719	8,722	31,039		0	528	2.39	57.80	37122
Apr-09	39904	299,767	8,769	34,185		38	322	4.78	65.60	37105
May-09	39934	300,658	8,793	34,193		78	92	6.03	73.60	37087
Jun-09	39965	330,056	8,810	37,464		268	10	5.19	82.90	37070
Jul-09	39995	375,128	8,801	42,623		219	4	7.57	80.30	37052
Aug-09	40026	373,756	8,797	42,487		257	3	4.54	82.20	37035
Sep-09	40057	351,819	8,809	39,939		133	29	5.90	76.80	37017
Oct-09	40087	341,095	8,794	38,787		6	373	5.78	61.80	36999
Nov-09	40118	287,454	8,749	32,856		0	510	0.96	57.40	36981
Dec-09	40148	280,930	8,760	32,070	36,125	0	926	4.03	42.50	36964
Jan-10	40179	293,784	8,716	33,706		0	1,137	3.02	35.10	36946
Feb-10	40210	260,798	8,700	29,977		0	1,013	1.61	35.80	36928
Mar-10	40238	263,667	8,717	30,247		0	567	1.14	56.10	36912
Apr-10	40269	325,570	8,741	37,246		36	202	2.31	71.60	36894
May-10	40299	301,446	8,769	34,376		130	73	9.95	75.70	36877
Jun-10	40330	369,379	8,797	41,989		348	0	4.59	86.10	36859
Jul-10	40360	390,880	8,798	44,428		403	0	6.06	87.50	36842
Aug-10	40391	381,942	8,805	43,378		406	0	0.58	89.20	36824
Sep-10	40422	457,201	8,814	51,872		201	31	0.61	83.80	36806
Oct-10	40452	395,602	8,800	44,955		17	212	1.24	72.00	36789
Nov-10	40483	337,398	8,780	38,428		0	544	4.46	58.00	36771
Dec-10	40513	306,830	8,766	35,002	38,800	0	1,163	2.50	33.40	36754
Jan-11	40544	305,980	8,757	34,941		0	1,132	2.04	35.30	36736
Feb-11	40575	265,364	8,722	30,425		0	744	6.23	47.90	36718
Mar-11	40603	263,461	8,717	30,224		4	575	4.69	55.50	36702
Apr-11	40634	287,371	8,739	32,884		21	225	12.70	68.80	36684
May-11	40664	284,422	8,754	32,491		115	150	6.45	72.70	36667
Jun-11	40695	320,484	8,777	36,514		251	0	3.20	83.30	36649
Jul-11	40725	381,325	8,784	43,411		443	0	4.93	89.10	36632
Aug-11	40756	370,420	8,784	42,170		317	0	3.64	85.90	36614
Sep-11	40787	406,635	8,778	46,324		109	86	5.98	74.80	36596
Oct-11	40817	316,467	8,767	36,098		5	326	4.41	65.60	36579
Nov-11	40848	282,188	8,757	32,224		0	456	7.68	58.80	36561
Dec-11	40878	263,942	8,735	30,217	35,660	0	753	4.43	48.60	36544
Jan-12	40909	269,823	8,718	30,950		0	857	3.54	47.40	36526
Feb-12	40940	266,899	8,704	30,664		0	724	3.10	49.10	36508
Mar-12	40969	264,838	8,709	30,410		32	303	3.31	66.90	36492
Apr-12	41000	278,195	8,758	31,765		15	288	2.30	67.60	36474
May-12	41030	300,959	8,786	34,254		148	34	3.61	79.70	36456
Jun-12	41061	369,936	8,813	41,976		240	18	1.61	85.20	36439
Jul-12	41091	428,411	8,834	48,496		479	0	8.02	92.20	36421
Aug-12	41122	436,207	8,833	49,384		286	0	2.15	85.30	36403
Sep-12	41153	386,630	8,842	43,727		121	77	5.41	76.70	36386
Oct-12	41183	347,453	8,902	39,031		5	337	1.28	63.40	36368
Nov-12	41214	314,825	8,897	35,385		0	668	1.76	54.10	36351
Dec-12	41244	260,756	8,872	29,391	37,119	0	720	6.56	49.00	36333
Jan-13	41275	251,945	8,864	28,423		0	911	4.46	43.50	36315
Feb-13	41306	272,502	8,863	30,746		0	837	1.53	44.40	36298
Mar-13	41334	268,888	8,874	30,301		0	789	5.35	48.30	36281
Apr-13	41365	262,279	8,893	29,493		28	300	4.88	66.90	36264
May-13	41395	240,263	8,846	27,161		120	83	5.66	75.70	36246
Jun-13	41426	365,046	8,843	41,281		261	0	7.54	83.70	36229
Jul-13	41456	339,430	8,854	38,336		296	0	9.10	83.20	36211
Aug-13	41487	351,075	8,979	39,100		310	3	5.14	84.30	36193
Sep-13	41518	332,194	8,988	36,960		159	20	1.63	80.30	36176
Oct-13	41548	315,866	8,957	35,265		42	269	6.23	67.80	36158
Nov-13	41579	293,449	8,923	32,887		0	648	2.45	53.40	36140
Dec-13	41609	266,267	8,920	29,851	33,317	0	835	5.58	45.70	36123
Jan-14	41640	308,935	8,917	34,646		0	1,181	2.31	37.50	36105
Feb-14	41671	313,008	8,894	35,193		0	915	4.73	41.00	36088
Mar-14	41699	273,784	8,869	30,870		0	721	2.89	53.30	36071
Apr-14	41730	294,882	8,872	33,237		13	212	6.00	69.90	36054
May-14	41760	263,329	8,884	29,641		139	92	5.44	77.90	36036
Jun-14	41791	343,810	8,882	38,709		297	0	5.59	84.40	36018
Jul-14	41821	332,078	8,884	37,379		260	2	3.23	83.70	36001
Aug-14	41852	340,803	8,946	38,096		337	0	9.58	85.20	35983
Sep-14	41883	337,470	8,950	37,706		161	30	4.35	80.30	35965
Oct-14	41913	374,847	8,927	41,990		25	226	4.48	68.00	35948
Nov-14	41944	247,863	8,908	27,825		0	764	2.37	48.40	35930
Dec-14	41974	266,053	8,910	29,860	34,596	0	817	3.30	45.40	35913
Jan-15	42005	293,149	8,902	32,931		0	1,049	1.85	40.10	35895
Feb-15	42036	250,618	8,901	28,156		0	1,118	3.00	34.60	35877
Mar-15	42064	286,757	8,903	32,209		0	655	7.46	54.20	35861
Apr-15	42095	318,071	8,902	35,730		11	265	11.41	67.20	35843
May-15	42125	306,489	8,912	34,391		152	61	2.07	79.00	35826
Jun-15	42156	359,653	8,925	40,297		280	18	5.64	83.30	35808
Jul-15	42186	360,509	8,945	40,303		341	0	9.66	84.90	35791
Aug-15	42217	355,492	8,950	39,720		247	0	2.19	83.90	35773
Sep-15	42248	380,412	8,947	42,518		193	16	2.72	82.50	35755
Oct-15	42278	384,177	8,937	42,987		17	242	3.45	68.10	35738
Nov-15	42309	323,138	8,943	36,133		3	440	3.23	60.20	35720
Dec-15	42339	272,577	8,931	30,520	36,325	0	501	7.22	56.80	35703
Jan-16	42370	289,610	8,942	32,388		0	1,025	1.24	41.00	35685

Feb-16	42401	271,968	8,944	30,408		0	775	4.46	47.00	35667
Mar-16	42430	287,139	8,974	31,997		2	402	2.80	62.10	35651
Apr-16	42461	302,784	9,000	33,643		24	267	3.31	68.50	35633
May-16	42491	297,687	9,016	33,018		81	142	6.49	72.80	35616
Jun-16	42522	335,616	9,020	37,208		305	1	4.56	86.20	35598
Jul-16	42552	366,416	9,030	40,578		411	0	4.98	87.40	35580
Aug-16	42583	377,696	9,064	41,670		424	0	6.54	87.60	35563
Sep-16	42614	393,311	9,042	43,498		265	18	1.67	85.30	35545
Oct-16	42644	373,340	9,022	41,381		76	120	0.83	75.10	35528
Nov-16	42675	339,859	9,000	37,762		14	458	1.34	62.20	35510
Dec-16	42705	300,158	9,005	33,332	36,407	0	862	6.18	45.30	35492
Jan-17	42736	215,394	8,996	23,943		0	767	4.72	47.10	35475
Feb-17	42767	340,140	9,001	37,789		3	511	3.39	57.40	35457
Mar-17	42795	263,204	9,013	29,203		5	537	3.29	58.60	35441
Apr-17	42826	270,993	9,072	29,871		62	138	1.85	72.60	35423
May-17	42856	309,894	9,088	34,099		119	102	5.64	75.50	35405
Jun-17	42887	356,416	9,106	39,141		235	6	5.78	83.60	35388
Jul-17	42917	380,671	9,111	41,781		379	0	5.24	86.70	35370
Aug-17	42948	370,939	9,126	40,646		249	0	5.07	83.00	35353
Sep-17	42979	388,526	9,128	42,564		140	38	3.74	78.80	35335
Oct-17	43009	335,198	9,103	36,823		55	221	5.76	70.60	35317
Nov-17	43040	317,267	9,090	34,903		6	535	2.35	57.10	35300
Dec-17	43070	274,098	9,083	30,177	35,078	0	931	2.38	44.30	35282
7/1/2018	43282									35160
7/1/2019	43647									34950
7/1/2020	44013									34740
7/1/2021	44378									34530
7/1/2022	44743									34319

Decline/Cust/Month in Gallons	-210
Decline/Cust/Year in Gallons	-2522
Annual Rate @ 2017	**-0.59%**

KENTUCKY-AMERICAN WATER COMPANY
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Witness: Gregory P. Roach

24. Refer to the Roach Testimony, page 5, line 14. Provide the data used to produce figure GPR-1.

Response:

Please see KAW_R_PSCDR3_NUM22_030119_Attachment_Residential_2.

KENTUCKY-AMERICAN WATER COMPANY
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COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Gregory P. Roach

25. Refer to the Roach Testimony, page 9, line 9. Provide the data used to produce figure GPR-3.

Response:

Please see KAW_R_PSCDR3_NUM23_030119_Attachment_Commercial_2.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Timothy J. Willig

26. Refer to Kentucky-American's Response to Staff's First Request, Item 37, to the responses to Staff's Second Request, Item 27, and to the Direct Testimony of Timothy Willig (Willig Testimony), Page 11. Explain why the actual employee cost share percentage in Schedule 37 for health benefits does not equal the cost share of 24 percent included in the Willig Testimony.

Response:

The employee cost share of 24% in the testimony of Tim Willig is indicative of the employee cost share for the full employee benefit program, not just the health benefit (medical and prescription drug) plan. For medical and prescription drug only, the split is 20% employee / 80% KYAWC. This differs from the actual historical cost split due to the following drivers:

1. Willis Towers Watson's BenVal looks only at the most heavily-enrolled medical plan when determining the employee/employer cost split, due to the extremely large volume of companies and offered plans in the database. The most heavily-enrolled plan in KYAWC's case is the preferred provider organization plan (PPO), for which employees are charged a higher payroll contribution, relative to total plan cost, than is the case under the consumer-driven health plan (CDHP). Hence the higher projected relative employee cost share. See KAW_R_PSCDR3_NUM026_030119_Attachment.

2. Actual medical claims can be expected to fluctuate from year to year with changes in enrollment, participant demographics, benefit designs, etc. Conversely, the BenVal results reflect expected cost sharing split based on the data entered for the most recent plan year. Total plan cost (employee and employer combined) in BenVal is developed using Willis Towers Watson's proprietary manual rating tool in conjunction with the benefit design of the most heavily-enrolled plan. This approach is used for purposes of "normalization" of plan costs for comparison purposes (i.e. ignoring anomalies in a plan sponsor's demographics, risk profile, etc., so that plans can be compared to benchmark on an equivalent basis). As this is an expected benefit cost that does not utilize historical claim payments, in practice it will frequently differ – at least somewhat – from actual claims experience. This difference (expected benefit cost vs. actual) is a primary driver of the discrepancy referenced above.

Preliminary rates and contributions - Union

Medical	Assumed EE's	2018	2019	Change %
PPO EE Only	749	$657.07	$665.45	1.3%
PPO EE+Ch	282	$1,682.11	$1,197.81	-28.8%
PPO EE+Sp	483	$1,682.11	$1,397.45	-16.9%
PPO EE+Fam	1,178	$1,682.11	$1,929.81	14.7%
	(5% to CDH)	(PPO)		
CDH EE Only	39	*$657.07*	$627.44	*-4.5%*
CDH EE+Ch	15	*$1,682.11*	$1,129.38	*-32.9%*
CDH EE+Sp	25	*$1,682.11*	$1,317.62	*-21.7%*
CDH EE+Fam	62	*$1,682.11*	$1,819.56	*8.2%*
	2,833	$47,492,233	$47,659,837	0.4%

EE Contributions	2018	2018 Sample	2019	Change %
PPO EE Only	$97.35	$116.40	$119.75	23.0%
PPO EE+Ch	$249.21	$224.91	$231.12	-7.3%
PPO EE+Sp	$249.21	$214.23	$220.34	-11.6%
PPO EE+Fam	$249.21	$258.75	$265.85	6.7%
	(PPO)	(CDHP)		
CDH EE Only	*$97.35*	*$54.30*	$61.81	*-36.5%*
CDH EE+Ch	*$249.21*	*$97.72*	$111.24	*-55.4%*
CDH EE+Sp	*$249.21*	*$114.01*	$129.79	*-47.9%*
CDH EE+Fam	*$249.21*	*$157.45*	$179.22	*-28.1%*
	$7,036,155	$6,901,014	$7,114,796	1.1%

Includes 4% consumerism reduction to CDH rate

Dental	Assumed EE's	2018	2019	Change %
Dental EE Only	788	$30.43	$32.03	5.3%
Dental EE+Ch	297	$77.89	$57.65	-26.0%
Dental EE+Sp	508	$77.89	$67.26	-13.6%
Dental EE+Fam	1,240	$77.89	$92.89	19.3%
		(Base)		
Buy Up EE Only	0	*$30.43*	$33.66	
Buy Up EE+Ch	0	*$77.89*	$60.59	
Buy Up EE+Sp	0	*$77.89*	$70.69	
Buy Up EE+Fam	0	*$77.89*	$97.62	
	2,833	$2,199,167	$2,300,560	4.6%

EE Contributions	2018	2018 Sample	2019	Change %
Dental EE Only	$5.22	$5.26	$5.22	0.0%
Dental EE+Ch	$13.61	$9.48	$9.40	-31.0%
Dental EE+Sp	$13.61	$11.06	$10.96	-19.5%
Dental EE+Fam	$13.61	$15.28	$15.14	11.2%
Buy Up EE Only	*$5.22*	*$5.26*	$6.85	
Buy Up EE+Ch	*$13.61*	*$9.48*	$12.34	
Buy Up EE+Sp	*$13.61*	*$11.06*	$14.39	
Buy Up EE+Fam	*$13.61*	*$15.28*	$19.87	
	$383,350	$378,313	$374,925	-2.2%
			0.162971357	

2018 dental contribs were about 17% of cost

Vision	Assumed EE's	2018	2019	Change %
Vision EE Only	331	$1.93	$3.37	74.6%
Vision EE+Ch	125	$4.95	$6.07	22.6%
Vision EE+Sp	213	$4.95	$7.08	43.0%
Vision EE+Fam	521	$4.95	$9.77	97.4%
		(Base)		
Buy Up EE Only	142	*$1.93*	$3.63	88.1%
Buy Up EE+Ch	53	*$4.95*	$6.53	31.9%
Buy Up EE+Sp	91	*$4.95*	$7.62	53.9%
Buy Up EE+Fam	223	*$4.95*	$10.52	112.5%
	1,699	$83,779	$148,480	77.2%

EE Contributions	2018	2018 Sample	2019	Change %
Vision EE Only	$0.33	$0.64	$0.51	54.5%
Vision EE+Ch	$0.87	$0.61	$0.91	4.6%
Vision EE+Sp	$0.87	$0.71	$1.06	21.8%
Vision EE+Fam	$0.87	$0.97	$1.47	69.0%
	(Base)	(Base)		
Buy Up EE Only	*$0.33*	*$0.64*	$0.77	133.3%
Buy Up EE+Ch	*$0.87*	*$0.61*	$1.37	57.5%
Buy Up EE+Sp	*$0.87*	*$0.71*	$1.60	83.9%
Buy Up EE+Fam	*$0.87*	*$0.97*	$2.22	155.2%
	$14,673	$16,186	$25,162	71.5%

Voluntary vision expects 70% increase in utilization

Preliminary rates and contributions – Non-Union

Medical	Assumed EE's	2018	2019	Change %
PPO EE Only	606	$582.15	$651.99	12.0%
PPO EE+Ch	215	$1,338.96	$1,499.58	12.0%
PPO EE+Sp	466	$1,280.74	$1,434.38	12.0%
PPO EE+Fam	1,025	$1,630.03	$1,825.57	12.0%
CDH EE Only	75	$543.03	$614.74	13.2%
CDH EE+Ch	11	$1,248.95	$1,413.91	13.2%
CDH EE+Sp	22	$1,194.64	$1,352.44	13.2%
CDH EE+Fam	78	$1,520.46	$1,721.29	13.2%
	2,498	$37,291,303	$41,793,825	12.1%

EE Contributions	2018	2019	Change %
PPO EE Only	$92.77	$97.80	5.4%
PPO EE+Ch	$213.17	$224.94	5.5%
PPO EE+Sp	$204.30	$215.16	5.3%
PPO EE+Fam	$259.56	$273.84	5.5%
CDH EE Only	$52.67	$60.55	15.0%
CDH EE+Ch	$120.93	$139.27	15.2%
CDH EE+Sp	$116.07	$133.22	14.8%
CDH EE+Fam	$147.27	$169.56	15.1%
	$5,791,489	$6,129,710	5.8%

Dental	Assumed EE's	2018	2019	Change %
Dental EE Only	681	$34.42	$35.32	2.6%
Dental EE+Ch	226	$79.16	$81.24	2.6%
Dental EE+Sp	488	$75.72	$77.70	2.6%
Dental EE+Fam	1,103	$96.37	$98.90	2.6%
		(Base)		
Buy Up EE Only	0	*$34.42*	$37.12	
Buy Up EE+Ch	0	*$79.16*	$85.38	
Buy Up EE+Sp	0	*$75.72*	$81.67	
Buy Up EE+Fam	0	*$96.37*	$103.94	
	2,498	$2,214,932	$2,273,010	2.6%

EE Contributions	2018	2019	Change %
Dental EE Only	$5.67	$5.67	0.0%
Dental EE+Ch	$13.13	$13.04	-0.7%
Dental EE+Sp	$12.13	$12.47	2.8%
Dental EE+Fam	$16.13	$15.88	-1.6%
Buy Up EE Only	*$5.67*	$7.47	
Buy Up EE+Ch	*$13.13*	$17.18	
Buy Up EE+Sp	*$12.13*	$16.44	
Buy Up EE+Fam	*$16.13*	$20.92	
	$366,474	$364,885	-0.4%

Vision	Assumed EE's	2018	2019	Change %
Vision EE Only	286	$1.95	$3.32	70.3%
Vision EE+Ch	95	$4.48	$7.64	70.5%
Vision EE+Sp	205	$4.29	$7.30	70.2%
Vision EE+Fam	463	$5.46	$9.30	70.3%
		(Base)		
Buy Up EE Only	123	*$1.95*	$3.57	
Buy Up EE+Ch	41	*$4.48*	$8.22	
Buy Up EE+Sp	88	*$4.29*	$7.86	
Buy Up EE+Fam	199	*$5.46*	$10.00	
	1,500	$75,340	$131,226	74.2%

EE Contributions	2018	2019	Change %
Vision EE Only	$0.33	$0.50	51.5%
Vision EE+Ch	$0.87	$1.15	32.2%
Vision EE+Sp	$0.87	$1.10	26.4%
Vision EE+Fam	$0.87	$1.40	60.9%
Buy Up EE Only	*$0.33*	$0.75	
Buy Up EE+Ch	*$0.87*	$1.73	
Buy Up EE+Sp	*$0.87*	$1.66	
Buy Up EE+Fam	*$0.87*	$2.10	
	$13,010	$22,237	70.9%

KENTUCKY-AMERICAN WATER COMPANY
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COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Kurt M. Kogler, Robert V. Mustich

27. Refer to Kentucky-American's Response to Staff's Second Request, Item 31. Explain why Kentucky-American is seeking to recover the cost of its Annual Incentive Plan, given that 50 percent of the corporate multiplier is based on financial performance and that employees will not receive incentive payments if Earning per Share falls below 90 percent of the target.

Response:

As explained in response to Item 31 of Staff's Second Request, the Company's performance compensation plans align the interests of our customers, employees and shareholders. To achieve performance pay financial goals, such as targeted earnings per share ("EPS") performance, operating efficiency is paramount. That is, unless the utility controls or reduces its operating costs, it cannot achieve a targeted EPS. Well-grounded financial measures keep the organization focused on improved performance at all levels of the organization, particularly in increasing efficiency, decreasing waste, and boosting overall productivity, all of which benefit customers directly. The operational components measure performance that can most directly influence customer satisfaction, health and safety, environmental performance, and operational efficiency, which affect the Company's financial performance (e.g., long-term cost savings or avoided costs).

Willis Towers Watson's 2018 General Rate Case Total Remuneration Study (dated October 26, 2018) indicates that practically all of Kentucky-American's peer organizations have performance-based plans. The lack of variable compensation would remove an important management tool and diminish management's ability to reinforce, measure and reward improvements in efficiency, decreasing waste and boosting productivity. Performance based plans provide strong reinforcement since performance compensation is much more variable than base pay. Base pay rates typically do not fluctuate or increase marginally while performance pay is much more variable based on performance outcomes. The Company believes tying pay to performance outcomes is superior to fixed compensation independent of performance outcomes. Furthermore, the requirement to achieve minimum financial results protects customers from payouts without corresponding performance achievements.

KENTUCKY-AMERICAN WATER COMPANY
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COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Kurt M. Kogler, Robert V. Mustich

28. Refer to Kentucky-American's Response to Staff's Second Request, Item 32, which was unresponsive. Confirm that Kentucky-American has not performed or commissioned a study or analysis that quantifies the benefits its ratepayers derive from the Annual or Long-Term Performance Plans.

Response:

As explained in response to Item 34 of Staff's Second Request, the performance measures themselves are a quantification of the benefits to customers. In addition, Willis Towers Watson performed a compensation study that addresses the reasonableness of Kentucky-American's compensation programs. Kentucky-American has not commissioned nor performed any additional studies or analyses specifically quantifying customer benefits associated with performance compensation plans.

KENTUCKY-AMERICAN WATER COMPANY
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COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Kurt M. Kogler, Robert V. Mustich

29. Refer to Kentucky-American's Response to Staff's Second Request, Item 34. Confirm that no specific study was conducted to quantify the benefits the ratepayers derive from the Annual and Long-Term Performance Plans.

Response:

As explained in response to Item 34 of Staff's Second Request, the performance measures themselves are a quantification of the benefits to customers. In addition, Willis Towers Watson performed a compensation study that addresses the reasonableness of Kentucky-American's compensation programs. Kentucky-American has not commissioned nor performed any additional studies or analyses specifically quantifying customer benefits associated with performance compensation plans.

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COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Kurt M. Kogler, Robert V. Mustich

30. Refer to Kentucky-American's Response to Staff's Second Request, Item 44. Explain why Kentucky-American is seeking to recover the cost of its incentive programs, on attracting new employees or employee retention, given that no specific studies or analyses on the impact of such incentive programs, have been completed.

Response:

Kentucky-American is seeking recovery for the cost of providing reasonable and customary compensation to its employees. While KAWC has not specifically performed an analysis to determine the impact of the performance compensation programs on attracting new employees, without the performance compensation programs, KAWC's compensation package is significantly below the overall market, which could lead to an increase in employee turnover and affect the ability to attract qualified new employees.

Willis Towers Watson's 2018 General Rate Case Total Remuneration Study (dated October 26, 2018) indicates short-term variable compensation programs are used by most investor owned utilities and publicly traded general industry companies to help attract, motivate and retain critically skilled employees. Kentucky-American's strategy to provide short-term variable compensation is consistent with labor market competitors.

Variable compensation is an important management tool and allows management to reinforce, measure and reward improvements in efficiency, decreasing waste and boosting productivity. Performance based plans are a strong performance recognition tool since they increase or decrease an employee's overall target pay by measuring performance against predetermined performance factors.

Robert Mustich provided the following summary of Willis Towers Watson's 2018 General Rate Case Remuneration Study (dated October 26, 2018) in his direct testimony (p. 10).

> Overall, our analysis indicates that Kentucky American Water's total remuneration programs are comparable to and competitive with market practices of other similarly sized utilities and are therefore reasonable. Kentucky American Water, like all the companies it competes with for talent, has to provide a competitive total remuneration opportunity delivered via programs that benefit employees, customers and shareholders. Kentucky American Water attempts to achieve this goal with its balanced and competitive base salary, short-term and long-term variable

compensation programs and benefits. My experience working with both utilities and general industry companies and the results of this study included as **Exhibit RVM-1** indicate the programs at Kentucky American Water are within a broad range of market norms and are not excessive in design or level of pay.

Every organization incurs direct and indirect costs associated with turnover[1]. Employees leave organizations for reasons other than dissatisfaction with compensation. However, by providing fair and competitive compensation, including performance based compensation, Kentucky American Water can minimize compensation-related resignations and can avoid being at a disadvantage compared to other companies when trying to attract skilled candidates. This may lower costs to customers related to replacing employees such as productivity loss, workplace safety issues, separation costs, recruiting costs, training costs and vacancy costs.

[1]see e.g. http://www.inc.com/suzanne-lucas/why-employee-turnover-is-so-costly.html

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COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Kevin N. Rogers

31. Refer to Kentucky-American's Response to Staff's Second Request, Item 45, and to the Direct Testimony of Kevin Rogers, page 19. Explain why annual work orders in 2018 are projected to increase by 25 percent, to 98,000 from only a 6.8 percent increase the year prior.

Response:

2018 field service work orders increased to 98,609 with increases being experienced in the majority of categories. The most significant drivers were increases in meter changes (10,504), sewer on/off (3,931) and consecutive estimate orders (3,696).

KENTUCKY-AMERICAN WATER COMPANY
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COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Kevin N. Rogers

32. Refer to Kentucky-American's Response to the Attorney General's First Request, Item 8. For each department listed in the table below, provide a detailed explanation for the forecasted increase in employee staffing from the "2014 December Actual" to the "2020 June Forecast."

Department	2014 December Actual	2020 June Forecast
Production	39	46
Distribution	65	74
Commercial	0	7
Administrative & General	22	25

Response:

KAW frequently reviews business needs and assigns duties and responsibilities accordingly, resulting in changes to job titles, as well as the creation and elimination of roles. Since 2014 there have been significant changes within and between departments. The changes described here are the net headcount changes by department.

The Production department had a net increase of 7 jobs as a result of filling December 2014 vacancies for Operations Specialist, Specialist Water Quality, Maintenance Service Specialist Supervisor Production and Waste Water Operator. Additionally, two trainee positions (Treatment Operator Trainee and Production Maintenance Trainee) have been added.

The Distribution department had a net increase of 9 jobs as a result of filling December 2014 vacancies for Crew Leader, Supervisor Field Operations and two Utility workers. Also three additional Field Service Representatives and four Utility workers have been added to the organization. Acquisitions since 2014 added three employees, including 1 Clerk Operations, and 2 Operations Generalists. Five employees have been transferred out of Distribution to create the Commercial department.

The Commercial department was created with 7 jobs being transferred from other departments. The Senior Supervisor Operations transferred from the Administration department, one Operations Clerk transferred from the Service Company (FRCC) and five from the Distribution department (Operations Specialist, four Specialist Service Delivery).

The Administration department had a net increase of 3 jobs by filling the 2014 vacant External Affairs Specialist and adding roles for Construction Inspector, Government Affairs Manager and Intern Admin (Engineering) and a new role for Operations

Specialist. The role of President was transferred to Service Company and a Senior Supervisor Operations was transferred to the Commercial department.

Kentucky American Water Company
Changes in the Jobs by Department
December 2014 to 2020 June Forecast

Department	Job	Dec-14	Forecast Jun-16
Admin	Admin Asst - Staff Supp (N)	1	1
Admin	Capital Program Coordinator		1
Admin	Clerk Opns (N)	2	2
Admin	Constuction Inspector		1
Admin	Dir Govt Affairs (State)		1
Admin	Drafter CAD (N)	1	
Admin	Engineer	1	
Admin	Engineering Project Manager		2
Admin	Engineering Specialist		2
Admin	Engineering Tech (N)	1	
Admin	Engineering Technician		4
Admin	Exec Asst (N)	1	1
Admin	Intern Admin		1
Admin	Mgr Business Performance	1	1
Admin	Mgr Ext Affairs (State)	1	1
Admin	Mgr Health and Safety Programs		1
Admin	Operations Specialist		1
Admin	President (Large States)	1	
Admin	Project Mgr Engr	1	
Admin	Spec Ext Affairs		1
Admin	Specialist Engrg (N)	4	1
Admin	Specialist Operations (N)	2	
Admin	Sr Project Engineer		1
Admin	Sr Project Engr	1	
Admin	Sr Specialist ORM	1	
Admin	Sr Supt Opns		1
Admin	Supt Opns II	2	
Admin	VP Operations (Large 2)		1
Admin	VP Operations (Large)	1	
Admin Total		22	25
Commercial	Clerk Opns (N)		1
Commercial	Operations Specialist		1
Commercial	Specialist Service Delivery		4
Commercial	Sr Supvr Operations		1
Commercial Total			7
Distribution	Admin Asst (N)	1	
Distribution	Backhoe Operator F320O	1	2
Distribution	Clerk Opns (N)	7	3
Distribution	Crew Leader F320O & U335P	10	8
Distribution	Field Service Rep F320O	12	15
Distribution	Jr Backhoe/Crew Leader F320O		1
Distribution	Jr Backoe/Crew Leader F320O	1	
Distribution	Meter Reader F320O	5	5
Distribution	Meter Technician F320O	1	1
Distribution	Mgr Field Operations	1	

Kentucky American Water Company
Changes in the Jobs by Department
December 2014 to 2020 June Forecast

Department	Job	Dec-14	Forecast Jun-16
Distribution	Operations Generalist		5
Distribution	Operations Generalist II (N)	4	1
Distribution	Operations Specialist		4
Distribution	Specialist Operations (N)	4	
Distribution	Sr Mgr Operations		1
Distribution	Sr Supt Opns		2
Distribution	Sr Supvr Operations		1
Distribution	Supvr Field Operations	2	1
Distribution	Supvr Opns		1
Distribution	Supvr Opns II	2	
Distribution	Utility F320O	14	23
Distribution Total		65	74
Production	Admin Asst - Staff Supp (N)	1	1
Production	Chief Operator (N)	1	
Production	Maint Service Specialist		2
Production	Maintenance Technician I F320O		2
Production	Maintenance Technician II F320O	4	2
Production	Maintenance Trainee		1
Production	Manager WQ & Env Compliance		1
Production	Mgr Opns	1	1
Production	Operations Generalist		1
Production	Operations Specialist		2
Production	Operations Technician		6
Production	Spec Wtr Qlty & Env Compl II	2	3
Production	Specialist Maint Service (N)	2	
Production	Specialist Operations (N)	1	
Production	Sr Automation & Controls Tech		1
Production	Sr Spec Cross Connect (N)	1	
Production	Sr Specialist Maint Service(N)	1	
Production	Supt Wtr Qlty & Envrn Cmpl	1	
Production	Supvr Cross Connection		1
Production	Supvr Opns		1
Production	Supvr Production	2	3
Production	Technician Production (N)	7	1
Production	TREATMENT PLANT OPERATOR 3S F320O		2
Production	Treatment Plant Operator Trainee II		1
Production	Treatment Plant Operator Util 2S F320O		1
Production	Treatment Plt Opr 2 F320O		1
Production	Treatment Plt Opr F320O U511	10	9
Production	Treatment Plt Opr Relief F320O	2	1
Production	Treatment Plt Opr Utility F320O	3	1
Production	Wastewater Operator		1
Production Total		39	46

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COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Kevin N. Rogers

33. Provide a detailed explanation as to the fluctuation in the commercial department from 0 employees in December 2014, to 24 employees in December 2015, and to 9 employees in December 2016.

Response:

Prior to 2015, the Company did not have employees dedicated to a commercial department cost center. The Company added a commercial cost center, 120203, in 2015. From year to year, fluctuations within the departments materialize from modifications made to the employee information within the cost centers. In 2016 those changes included moving 13 field service representatives and 4 meter readers back to distribution (120206) from commercial (120203). The Company also relocated an operations specialist and a clerk from distribution (120206) to commercial (120203). The modifications in the cost centers are what caused the fluctuation of 24 commercial employees in December 2015 to 9 employees in December 2016. Changes in the number of employees in each cost center could be done to better align the employees with the business, add new employees, or to correct an employee assigned to the wrong cost center. See the shifts within the cost centers from 2014 through 2016 below.

2014			2015			2016		
Cost Center	Emp Count	Department	Cost Center	Emp Count	Department	Cost Center	Emp Count	Department
120105	6	Admin	120105	5	Admin	120105	5	Admin
120114	10	Admin	120114	9	Admin	120114	9	Admin
120121	2	Admin	120121	3	Admin	120121	3	Admin
120201	4	Production	120201	8	Production	120201	10	Production
120206	61	Distribution	120203	24	Commercial	120203	9	Commercial
120214	1	Admin	120206	44	Distribution	120206	55	Distribution
120217	4	Production	120214	1	Admin	120217	5	Production
120250	11	Production	120217	5	Production	120250	10	Production
120251	10	Production	120250	9	Production	120251	8	Production
120252	9	Production	120251	8	Production	120252	4	Production
123001	1	Production	120252	9	Production	123001	1	Production
123005	3	Admin	123001	1	Production	123005	6	Admin
123006	4	Distribution	123005	3	Admin	123006	5	Distribution
	126		123006	5	Distribution	123301	1	Production
				134		123305	1	Admin
							132	

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Witness: Nick O. Rowe/Melissa L. Schwarzell

34. Refer to the Direct Testimony of Nick O. Rowe (Rowe Testimony), page 11, lines 4–7. Given that this Commission adopted the use of a forecasted test year to reduce regulatory lag and that Kentucky-American has filed forecasted rate cases since 1992, quantify the significant and persistent regulatory lag referred to in Mr. Rowe's testimony.

Response:

This section of testimony states "Kentucky-American is looking to reach and maintain an optimal level of infrastructure investment, but if Kentucky's regulatory treatment does not keep up with ongoing capital expenditures and results in significant and persistent regulatory lag, it discourages expenditures in Kentucky verses alternative investments available to American Water." The referenced regulatory lag is the lag that will result if Kentucky's regulatory treatment does not keep up with ongoing capital expenditures associated with an optimal level of infrastructure investment. The Company has not quantified this prospective regulatory lag.

While the use of a future test year helps mitigate the negative impact of regulatory lag, it does not mitigate regulatory lag beyond the test year. Nearly all American Water affiliates have mechanisms that provide more frequent relief through either infrastructure surcharges or multiyear rate plans. There is little question that more significant lag discourages investment in Kentucky relative to alternative investments available to American Water.

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Witness: Brent E. O'Neill

35. Refer to the Direct Testimony of Brent E O'Neill P.E. (O'Neill Testimony), page 26, lines 8–11. Mr. O'Neill explains that Kentucky-American has developed detailed plans for the types of projects that will constitute the majority of the work performed under the first years of the QIP Rider. Provide a detailed list of the projects that would be recovered through the first five years of the proposed QIP Rider. The list should include the projected cost of each project and estimates of the QIP that would be required for each project.

Response:

In response to AG 1-59, Number 59, the Company provided a 5-year QIP Expenditure Plan that provided a list of projects that the Company expects to include in the first five years of the QIP Rider. Please find attached the exhibit that was provided in that response. Also attached are anticipated main replacement projects associated with Line B (replacements other than cast iron or galvanized mains) and Line B2 (replacements of cast iron and galvanized mains). The cost estimates are based on present day dollars and the list of projects may vary from year to year based on changing priorities. Updated cost estimates and project lists for Line B and Line B2 projects will be provided as part of each annual QIP filing.

The 5-year QIP Expenditure Plan includes cost estimates for recurring projects for each year and individual cost estimates for each investment project. The cost estimates for all lines are based on present day dollars. Updated cost estimates will be provided as part of each annual QIP filing.

The additional recurring project lines proposed to be included in the QIP are made up of non-revenue producing (not constructed to serve new customers) projects:

- Line C - Mains Unscheduled,
- Line D - Mains Relocated,
- Line F - Hydrants and Valves Replaced,
- Line H - Services Replaced,
- Line J - Meters Replaced.
- Line L - SCADA Equipment and Systems,
- Line M - Security Equipment and Systems, and
- Line Q - Process Plant Facilities and Equipment.

Line C - Mains Unscheduled is used by Kentucky American to replace sections of mains with chronic main breaks to extend the useful life of these mains instead of just making repeated repairs on the same main. These are unplanned replacements performed in

response to an active main break. Kentucky American utilizes historic spend to develop the expected spend on this line.

Line D - Mains Relocated includes the relocation of existing water mains, including valves and other appurtenances, which are necessary due to ongoing municipal or state agency projects. These costs are not reimbursable. The work associated with the Main Relocated –Line D is a replacement of infrastructure that is impacted by improvements being proposed by municipal or state agency that causes a conflict with the Company's infrastructure. The customer benefits by work associated with the Main Relocated – Line D since the replacement main that is installed to eliminate the conflict with the municipal or state agency projects is typically a newer main that is stronger and more reliable than the main being replaced. At present Kentucky American is not aware of any specific required relocation of existing infrastructure over the five year period but the anticipated spend is based on historic spend.

Line F – Hydrant and Valves includes the replacement of leaking, failed or obsolete hydrants, including hydrant assemblies and valves that are Company funded. The replacement of hydrants and valves that have been determined to not function properly through ongoing inspections allows KAWC to maintain public safety and ensure the distribution system is able to provide adequate and reliable service to the community. On average, the Company anticipates replacing 53 hydrants and 45 valves each year during the five year period.

Line H – Services Replaced includes the replacement of water services or the small diameter pipe that connects the customer to the Company's distribution main. The work includes the replacement of the water service between the Company's distribution main and the customer's property line, including the replacement of corporation stops, or shut-off valves. The replacement of water services that are causing reduction in water flow or concerns with water quality are included in the work performed within this spending line. The Company anticipates replacing 260 services each year during the five year period.

Line J – Meters Replaced includes the replacement or improvement of existing customer meters and meter settings. The work associated with this spending line allows for the replacement of meters and meter settings that are nearing the end of their useful service life and could cause service disruptions or inconveniences to a customer if they were to fail or have failed unexpectedly. The Company anticipates replacing an average of 4,847 meters each year during the five year period.

Line L – SCADA Equipment and Systems is for the installation or replacement of existing SCADA Equipment and Systems. The acronym SCADA can be defined in several slightly different ways. However, Kentucky American generally uses System Control and Data Acquisition, which is the computerized system for monitoring and operating the treatment plants and network facilities. By making investment in the monitoring and control system for the treatment plants and the network facilities, the Company is able to ensure that the operation of the system is meeting safety and environmental requirements. Over the next five years, the Company anticipates the

majority of the spending will be associated with the replacement of outdated controllers, hard drives for historical information and uninterruptable power supplies throughout its facilities and remote sites.

Line M - Security Equipment and Systems is associated with the security equipment and systems that are employed at the Kentucky American facilities. This may include fencing, alarm systems, cameras, barricades, electronic detection or locking systems, software, or other assets related directly to security. These improvements allow the Company to maintain its security system and follow the Homeland Security Directive 9 to "*develop robust, comprehensive, and fully coordinated surveillance and monitoring systems.*" Kentucky American believes it is paramount to ensure that its facilities are monitored actively. These improvements will maintain the equipment and ensure current technology is employed to provide safe drinking water and protect its infrastructure. It is anticipated that during the five year period, Kentucky American will perform improvements to the Kentucky River Station 1 campus and several of the remote tank and booster stations.

Line Q - Process Plant Facilities and Equipment is for the new purchase or replacement of existing components of water supply, water treatment, water pumping, water storage, and water pressure regulation facilities, including associated building components and equipment. Replacements may be planned or made because of failure, or may include improvements. Through the investment in the improvements associated with this spending line, the Company is able to ensure compliance with federal and state safety and environmental compliance requirements that will ensure safe drinking water.

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Witness: Brent E. O'Neill

36. Refer to Kentucky-American's Response to Staff's Second Request, Item 49.b. Provide a detailed explanation of the importance of the QIP projects to Kentucky-American's ability to provide safe, adequate, and reliable water service to its ratepayers.

Response:

The QIP projects will allow Kentucky American to prioritize and undertake drinking water infrastructure renewal investments and address portions of the water distribution system that have begun to reach or surpass their useful life in an accelerated manner. Through the QIP projects, the Company's efforts will result in lower costs to customers over time rather than waiting to repair and replace pipes as they break. This is because planned pipe replacements are much less costly on a unit cost basis than are the costs of increasing pipe breaks, with the attendant service disruptions, health risks from potential drinking water contamination, property damages, community health, and economic development opportunity costs.

The condition of KAWC's water infrastructure has a direct impact on the health, safety, energy efficiency, and economic condition of our communities. QIP projects will assist KAWC to accelerate investments to improve fire flows, prevent supply contamination, and prevent the economic damage and disruption caused by main breaks.

Existing older water mains within the distribution system can yield inadequate flows for fire protection due to both under sizing of the original main and loss of diameter with age. Older distribution mains were often 2 to 4 inches in diameter, whereas current distribution mains are usually 6 to 8 inches. The under sizing of older mains is made worse by the fact that buried water mains, particularly unlined cast iron and steel mains, lose diameter as they age due a buildup of corrosion and mineral deposits on the interior of the main.

Through the investment afforded to the QIP projects, KAWC can remove cast iron main in the system that accounts for 64.2% of the water main breaks at a quicker rate than in the past. This allows KAWC to reduce the health risk to its customers that could result from unexpected main breaks. When water mains break, the resulting pressure drop can draw contaminants like giardia and volatile organic compounds out of the soil and into the public's drinking water.

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COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

37. Refer to Kentucky-American's Response to Staff's Second Request, Item 53.a. Kentucky-American states that a forecasted QIP would allow the Commission to review all aspects of the filing including the verification that the included projects qualify for the QIP and are prudent. Explain why a historical QIP would not allow the Commission to conduct such a review after the projects were completed.

Response:

A historic QIP would allow the Commission to conduct such a review after the projects were completed, but not prior to the investments being made by the Company. As explained in response to Item 53.a., having a future QIP gives the Commission and its staff the opportunity to verify that the included projects are prudent and eligible for cost recovery under the QIP. It also prevents the Company from making investments the Commission deems not eligible for recovery under the QIP and allows the Company to shift dollars to other projects that are QIP eligible. The Company believes this brings an element of transparency for the work being performed through the QIP and protection to its customers.

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Witness: Melissa L. Schwarzell

38. Refer to Kentucky-American's Response to Staff's Second Request, Item 53.a. Explain in detail why a forecasted QIP would act as a greater incentive to ensure Kentucky-American maintains its focus on the replacement of cast iron mains.

Response:

The Company's response to PSC 2-53(a) was not intended to suggest in any way that a historical test year would reduce the focus on replacing cast iron mains.

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Witness: Melissa L. Schwarzell

39. Refer to Kentucky-American's Response to Staff's Second Request, Item 54. Kentucky-American continues to refer in generalities to the potential cost savings an infrastructure replacement rider, Distribution System Improvement Charge (DSIC), or QIP will provide to its ratepayers.

a. Provide an analysis that quantifies the annual cost savings that Kentucky-American expects to occur in the first five years if the QIP rider is approved.

b. Explain how Kentucky-American would respond to a Commission requirement that approval of the QIP Rider is contingent on Kentucky-American's commitment to include a provision for any estimated cost savings. Provide a detailed explanation for Kentucky-American's response.

Response:

a. Approval of the QIP Rider can result in a variety of cost savings, including decrease in the frequency of water main breaks and leaks, which in turn will reduce the corrosion of surrounding utility pipes, reduce the disruption of automobile, pedestrian and public transportation, and reduce impediments to local economic growth. Although most of these breaks are minor, serious ruptures can and do occur. With these serious breaks, the impact can be catastrophic due to flooding of streets and sidewalks, and in some instances flooding of local businesses and basements of local residents. In rare instances, the loss of water can undermine pavement or building foundations that can lead to the failure of pavements or the loss of a building that can result in significant property damage. Failure of the water distribution system can result in delay of emergency response, and damage to other surrounding essential infrastructure. The impact of a water main break is mostly localized, with the exception of large main breaks that impact a large portion of the community or the loss of the service to the entire community. A QIP rider will reduce the frequency of these events over time and as a result produce cost savings which, although potentially substantial, are difficult to quantify. In addition, the attached exhibit provides a breakdown of the calculation utilizing the unscheduled maintenance expense that was included within the forecasted test year. Based on this calculation, the assumed O&M cost savings through a reduction of unscheduled maintenance expense would be $3,413 each year if 10 miles of main were replaced each year.

b. Inclusion of a cost savings requirement in a QIP rider would be misguided because it would require the Company to prove a negative – the costs that will be

avoided (including water main breaks, significant property damage, disruption of transportation) as a result of accelerated infrastructure replacement under the QIP.

DEVELOPMENT OF UNSCHEDULED MAINTENANCE EXPENSE

KAWC Forecasted Revenue Requirement
For T&D Overtime and Maintenance

SAP GL Account	SAP GL Account Description	96 NARUC Account	Forecasted Test Year
50111400	LaborOper NS OT TD	601.5	$28,107
50111415	LaborOperNS OT TD Ln	601.5	$9,517
50111420	LaborOperNS OT TD Mt	601.5	$85,505
50112400	LaborMaint NS OT TD	601.6	$165,425
50112420	LaborMaintNSOT TD Mn	601.6	$15,761
50112430	LaborMaintNSOT TD Sv	601.6	$29,885
50112435	LaborMaintNSOT TD Mt	601.6	$6,294
50112440	LaborMaintNSOT TD Hy	601.6	$2,906
50119900	LaborNSOT CapCredits	601.8	($71,290)
	Overtime T&D		$272,109
62002400	M&S Maint TD	620.6	$205,767
62502400	Misc Maint TD	675.6	$128,048
63150024	Contr Svc-Maint TD	636.6	$89,615
	Maintenance T&D		$423,430
	Sum Overtime and Mantenance T&D		**$695,539**
	Current Miles of	2038	miles
	Unscheduled Maintenance Saving per Mile	$341	savings per mile
	2020 Projected QIP Replacement Program replaced main quantitiy	2.8	miles
	Total 2020 O&M Savings of Unscheduled Maintenance	**$955.60**	
	2021 Projected QIP Replacement Program replaced main quantitiy	9.8	miles
	Total 2021 O&M Savings of Unscheduled Maintenance	**$3,344.60**	

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Witness: Melissa L. Schwarzell

40. Refer to Kentucky-American's Response to Staff's Second Request, Item 55.

a. Kentucky-American was asked to provide detailed estimates of the cost it would incur when it files the annual QIP request in Case No. 2012-00520[1] and in Case No. 2015-00418.[2] Explain why Kentucky-American is not prepared in this instant case to provide the requested cost estimates.

b. Given the number of American Water subsidiaries that have an infrastructure replacement rider, explain why Kentucky-American is unable to use the costs actually incurred by the other subsidiaries as the basis for a cost estimate for its annual QIP request.

Response:

a. The Company is conscious of the potential administrative complexity of infrastructure surcharge proceedings and hesitates to estimate incremental costs without all parties' input as to how they intend to approach such proceedings, which could impact the potential scope, complexity, duration, and, consequently, cost of these proceedings. The testimony of Company witness Melissa L. Schwarzell lays out a proposal to have a 90-day review period between the petition filing and the effective date of the surcharge. This proposal, if approved, would limit the cost of the proceeding.

b. The incremental costs of infrastructure replacement riders are not tracked for each filing by all other American Water subsidiaries. However, based on forecasted mechanism filings in other jurisdictions, the Company hereby provides an estimated range of $9,000 to $194,000 in costs associated with making a QIP filing. The high end of this range reflects the possibility of fully litigating QIP proceedings. The low end of this range reflects a much more streamlined approach. Actual costs could be within or outside of this range and would depend on the procedural steps, the complexity of the required filing, and the cost of legal and other related services, for example.

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[1] Case No. 2012-00520, *Application of Kentucky-American Water Company for an Adjustment of Rates Supported by a Fully Forecasted Test Year* (Ky. PSC Oct. 25, 2013).

[2] Case No. 2015-00418, *Application of Kentucky-American Water Company for an Adjustment of Rates* (Ky. PSC Aug. 23, 2016).

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Witness: Melissa L. Schwarzell

41. Refer to Kentucky-American's Response to Staff's Second Request, Item 54.

a. Kentucky-American was requested to provide detailed estimates of the cost it would incur when it files an annual Balancing Adjustment filing in Case No. 2012-00520 and in Case No. 2015-00418. Explain why Kentucky-American is not prepared in this instant case to provide the requested cost estimates.

b. Given the number of American Water subsidiaries that have an infrastructure replacement rider, explain why Kentucky-American is unable to use the costs actually incurred by the other subsidiaries as the basis for a cost estimate for its annual Balancing Adjustment filing.

Response:

a. The Company is conscious of the potential administrative complexity of infrastructure surcharge proceedings and hesitates to estimate incremental costs without all parties' input as to how they intend to approach such proceedings, which could impact the potential scope, complexity, duration, and, consequently, cost of these proceedings. Please note that the Company believes that this request intended to refer to PSC 2-56 rather than to PSC 2-54.

b. The incremental costs of infrastructure replacement riders are not tracked for each filing by all other American Water subsidiaries. However, based on forecasted mechanism filings in other jurisdictions, the Company hereby provides an estimated range of $9,000 to $194,000 in costs associated with making the annual Balancing Adjustment filing. The high end of this range reflects the possibility of fully litigating a Balancing Adjustment filing which the Company believes is unlikely. Actual costs could be within or outside of this range and would depend on the procedural steps, the complexity of the required filing, and the cost of legal and other related services, for example.

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Witness: Melissa L. Schwarzell

42. Refer to the O'Neill Testimony, page 24, lines 9–21 and the responses to Staff's Second Request, Item 57. Identify each American Water subsidiary that is authorized to include the replacement of aging treatment plant items or facilities, (i.e., pumping equipment, generators, water quality sampling equipment, SCADA equipment, and treatment equipment) through its infrastructure replacement tariff rider.

Response:

Illinois-American and Tennessee-American are authorized to include most replacements of aging treatment plant items or facilities in their infrastructure replacement tariff riders. New York-American has been authorized to recover specific capital improvement projects that have included the new and replacement treatment plant items or facilities. West-Virginia American has been authorized to recover costs of replacing storage tanks in its infrastructure replacement tariff rider and just recently received approval to also include replacement of pressure control systems and pumping stations in their infrastructure replacement tariff rider filings.

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Witness: Melissa L. Schwarzell

43. Refer to Kentucky-American's Response to Staff's Second Request, Item 63.

a. The response states that Kentucky-American would consider extending the interval between filing rate cases if significant issues in this instant case are resolved in a way that will allow Kentucky-American a reasonable opportunity to earn its authorized return. Explain if this response means that granting the requested QIP Rider alone will not affect the time between rate case filings.

b. If approval of the QIP Rider would be contingent on a Kentucky-American commitment to extend the time interval between rate case filings, provide the interval Kentucky-American would commit. Provide a detailed explanation for Kentucky-American's response.

Response:

a. Please see response to Item 57 of Staff's Second Request, which shows that where a QIP has been approved, the time between rate cases has been extended. The Company anticipates that the granting of the QIP Rider in this case would similarly affect the time between rate case filings.

b. The need to file a rate case can be based on a variety of factors, including changes in the trajectory of revenues, expenses and plant (not eligible for QIP). QIP cost recovery is limited to investment associated with accelerated infrastructure replacement for non-revenue producing investments necessary to maintain and improve service reliability (e.g., water efficiency investments, aging infrastructure replacement, and compliance with environmental regulations). Therefore, the Company believes it would be inappropriate to make the QIP approval contingent on a commitment to a specific time between rate case filings.

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Witness: Melissa L. Schwarzell

44. If Kentucky-American is unwilling to commit to extending the interval between filing rate cases and continues its current course of submitting rate cases approximately every two years, respond to the following view that Kentucky-American's estimated impact of the accelerated replacement rider has been overstated.

Response:

Please see response to Item 57 of Staff's Second Request, which shows that where a QIP has been approved, the time between rate cases has been extended. The Company anticipates that the granting of the QIP Rider in this case would similarly affect the time between rate case filings. It would not be unreasonable to expect that, all other things being equal, the timing between cases could be extended.

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Witness: Brent E. O'Neill

45. In Case No. 2012-00520, KAWC proposed to implement a DSIC that would permit it to accelerate the replacement of aging infrastructure. Provide a comparative analysis listing the similarities and the differences between the DSIC and the proposed QIP Rider in this instant case. Include detailed discussions for each similarity and difference noted in Kentucky-American's comparative analysis.

Response:

a. Following is a comparative analysis listing of the similarities and differences between DSIC and the proposed QIP Rider:

	Case No. 2012-00520	**Case No. 2018-00358**
Name	Distribution System Improvement Charge (DSIC)	Qualified Infrastructure Program (QIP)
Proposed Plant Accounts	331 Transmission and Distribution 333 Services 334 Meters and Meter Installation 335 Hydrants	304 – Structures & Improvements 309 – Supply Mains 310 – Power Generation Equipment 311 – Pumping Equipment 320 – Water Treatment Equipment 330 – Distribution Reservoirs 331 Transmission and Distribution 333 Services 334 Meters and Meter Installation 335 Hydrants 344 – Laboratory Equipment 346 – Communication Equipment 347 – Miscellaneous Equipment
Test Period	Forecasted 13-month average	Forecasted 13-month average
Filing	90 days prior to effective date	90 days prior to effective date
Reconciliation	60 days after close of test period	60 days after close of test period
Depreciation Rates	Prior rate case	Prior rate case
Property Taxes	Prior rate case	Prior rate case
Revenue Taxes	Prior rate case	Prior rate case
Interest on over/ under revenue	Yes	Yes
Pre-Defined Program of Main Replacements	No	Yes

Cap on Cumulative Rate	10%	None
Defined Safety Considerations	No	Yes
Defined Distribution Pump Station Replacement	No	Yes
Defined Water Treatment Plant Replacement	No	Yes
Additional Investment	Not Defined	Yes - $6 to $10 million additional (present day dollars)

b. Following is a detailed discussion of the similarities and differences of DSIC and the proposed QIP Rider:

Name	Kentucky American believed the revised name more accurately reflects the description of the goal to replace qualified infrastructure that is critical to maintaining the safety and environmental health of the public.
Proposed Plant Accounts	Kentucky American added the Pumping Equipment infrastructure, as the majority of pumping equipment is used at the treatment facilities to supply the distribution system or within the distribution system to maintain system pressure. Maintaining system pressure is one of the most significant ways that a water system protects the public from contamination and supports adequate fire protection. Replacement of pumping equipment is also one of the most effective ways to reduce system costs, all else being equal, through reduced power usage associated with higher pump efficiencies and thus reduced power costs. The current QIP also has included treatment plant replacements projects that are identified as posing a potential threat to meet regulatory compliance, system reliability, documented structurally deficiencies, or have safety concerns.
Test Period	A forecasted period has been proposed in both, as Kentucky American believes that a forecasted mechanism will provide the greatest benefit in reducing regulatory lag, attracting capital and extending the period between rate cases.
Filing	Both proposals included a filing 90-days prior to the effective date of the annual adjustment.
Reconciliation	Both proposals included a reconciliation 60-days after the close of the QIP investment period.
Depreciation Rates	Both proposals included the depreciation expense and accumulated depreciation, to be calculated at the depreciation rates in the most recent rate case.
Property Taxes	Both proposals included property tax calculations at the rate of overall property tax in the most recent rate case.
Revenue Taxes	Both proposals included revenue tax calculations at the rate of revenue tax in the most recent rate case.

Interest on over/ under revenue	Both proposals included interest on either over collection of revenues or under collection of revenues.
Prioritization of Main Replacements	The QIP proposal prioritizes main replacements for the first five years that can be updated, with the target of replacing all cast iron and galvanized mains within the next 25 years. The DSIC did not define the target mains; it was based on a general target of replacing smaller cast iron and galvanized mains.
Cap on Cumulative Rate	The DSIC proposed a cap on the total amount of customer bill increase between rate cases of 10%. However, a cap would limit the ability to extend the time between rate cases and therefore a cap has not been proposed with the QIP.
Safety Considerations	The QIP has identified the safety concerns with regard to not accelerating the infrastructure replacement including water quality risks, fire protection risks, and the risks for contamination. Although these risks were all very real at the time of the proposed DSIC, they were not well defined with respect to the proposed DSIC.
Distribution Pump Station Replacement	The QIP has identified the benefit of replacing distribution pump stations to maintain adequate pressure, fire protection and system redundancy. The QIP replacement of distribution pump stations will allow for the placement of more efficient pumps in the system and reduce power usage. The DSIC did not include pumping equipment eligible infrastructure.
Water Treatment Plant Replacement	The QIP has included treatment plant replacements projects that are identified as posing a potential threat to meet regulatory compliance, system reliability, documented structurally deficiencies, or have safety concerns. The DSIC did not include water treatment equipment.
Additional Investment	Over time, KAWC expects to increase the replacement trajectory and invest an additional $6 to $10 million each year (present day dollars) for the first 5 years of the QIP Rider to close the gap between the current replacement rate and level of replacement of the system as indicated by the Nessie Curve analysis conducted in KAWC's Report (BEO Exhibit 2) and address aging distribution pump station infrastructure. The DSIC did not include additional investment.

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Witness: Brent E. O'Neill

46. Kentucky-American's proposed DSIC mechanism was denied by the Commission in Case No. 2012-00520. Provide a detailed explanation of what has changed since Case No. 2012-00520 that would persuade the Commission to revise its opinion and to approve the proposed QIP in this instant case.

Response:

KAWC believes it has addressed the four reasons that the PSC identified in its denial of the DISC in Case No. 2012-00520.

First, the PSC determined that "[g]iven the minimal impact of Kentucky-American's increased investment on main replacement; the Commission is of the opinion that the effect of the DSIC tariff rider will be marginal."[1] The QIP is intended to address some of the significant challenges facing the Commonwealth of Kentucky, including water loss that averages 30 percent on a state-wide basis and drinking water infrastructure needs that have increased 33 percent from 2013 to 2017, with a current estimate of $8.2 billion over 20 years.[2] KAWC believes that the program it has presented, including the analysis of the different lengths of the program to achieve a higher replacement rate of cast iron main to allow it to replace an asset that only accounts for 15.3% network but accounts for 64.2% of the main breaks demonstrates the impact is far greater than marginal. KAWC also believes the replacement of distribution pump stations and water treatment equipment that are identified as posing a threat to meet regulatory compliance, system reliability, documented structurally deficiencies, or have safety concerns is critical in maintaining the integrity of the system. The replacement of critical infrastructure on this scale cannot happen overnight, but has to take place over a period of time and with gradualism for both the costs and impact.

Second, the PSC determined that "[i]f Kentucky-American continues its current course of submitting rate cases approximately every two years, then its estimated impact of the accelerated replacement of the mains has been overstated."[3] KAWC disagrees that it is on a current course of submitting rate cases approximately every two years. KAWC has averaged three years between the last three rate cases. However, the projected trajectory of investment to effectively reduce the Company's 377 year replacement rate will not be accomplished without supportive regulatory treatment for such investment. In addition, other utilities have been successful in achieving longer periods between rate cases after

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[1] PSC Order in Case No. 2012-00520, October 25, 2013, pages 61-62.
[2] ASCE Kentucky Section, "2019 Report Card for Kentucky's Infrastructure," at 30 (available at https://www.infrastructurereportcard.org/state-item/kentucky/).
[3] Order, page 62.

having a surcharge mechanism in place. *See* KAWC response to Item 57 of Staff's Second Request for Information. As Company witness Mr. Rowe explains in his direct testimony at pages 10-11, if Kentucky's regulatory treatment does not keep up with ongoing capital expenditures and results in significant and persistent regulatory lag, it discourages expenditures in Kentucky versus alternative investments available to American Water. The QIP is therefore important to the Company's ability to compete for discretionary allocations of American Water's investment and financing capacity. In addition, the QIP allows for smaller, more gradual increases to customers' bills as the on-going plant investment is made, rather than the larger rate increases associated with base rate cases where the Company's plant investments are recognized in a single, lump sum basis.

Third, the PSC determined that "Kentucky-American contradicts itself when it states that mains with a diameter of six inches or less are responsible for the majority of the distribution system leaks and failures, but then claims that DSIC tariff rider will not result in any identifiable cost savings in the near term."[4] KAWC respectfully disagrees that it was or is contradictory in seeking a DSIC or QIP. Mr. O'Neill's testimony in this case clearly identifies that 64.2% of distribution system leaks and failures occur on cast iron and galvanized mains. Cost savings may be appropriate to include if they can be tracked accurately and reliably, but savings are difficult if not impossible to quantify on a year-over-year basis due to the many variables that can affect unaccounted-for water amounts. Certainly, all things being equal, unaccounted-for water loss will be reduced if leaking main is replaced. However, that reduction can be wiped out in the course of one year to the next with fluctuations in extreme weather that will increase main breaks.

Fourth, the PSC determined that "[u]nlike the DSIC tariff rider, the accelerated gas main tariff riders were allowed for safety concerns and the main replacements were for a defined accelerated replacement period."[5] KAWC encourages the Commission to consider the very real safety concerns with aging water infrastructure. These safety concerns continue to escalate each year across the entire United States. As discussed in Mr. O'Neill's testimony, replacement of aging infrastructure has very real and significant impacts on reliability and water quality and if not addressed can lead to potential impacts to public health. Further, the infrastructure that is scheduled for replacement provides fire protection at a lower rate than other areas KAWC serves that can erode as the mains are deteriorating. KAWC will continue to provide its customers safe and adequate water service, but, clearly, an accelerated infrastructure replacement program will help reduce the risk of these safety concerns. Since the conclusion of Case No. 2012-00520, public utility regulatory agencies in other states either have approved or are moving toward approval of alternative rate mechanisms similar to the proposed QIP for water utilities. Regulatory agencies are continuing to recognize the advantages to these mechanisms as mutually beneficial to all the stakeholders.

[4] Order, page 62.
[5] Order, page 62.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

47. Refer to Kentucky-American's Response to Staff's Second Request, Item 70, page 3 of 4. Provide a breakdown for each identified expense category between the costs directly charged and indirectly charged to Kentucky-American. Include descriptions of the services being provided for each listed category.

a. GL Account 50100000 - Labor Natural Account

b. GL Account 52567000 - Relocation Expense

c. GL Account 53110000 - Contract Svc-Eng. – Natural Account

d. GL Account 53150000 - Contract Svc-Other – Natural Account

e. GL Account 53151000 - Contract Svc-Temp Empl. – Natural Account

f. GL Account 53155000 - Contract Svc-Legal – Natural Account

Response:

The costs for the expense categories listed above in subparts a through f are all allocated to Kentucky-American.

a. GL Account 50100000 – Labor Natural Account represent internal employees cost associated with the business development and external affairs and public policy services provided by Service Company. Please reference Staff's Second Request, Item 70, page 2 for the description of the business development and external affairs and public policy costs.
b. GL Account 52567000 – Relocation Expense represent internal employees cost associated with expenses incurred to move from their current location to another location for business purposes within the business development and external affairs and public policy function.
c. GL Account 53110000 – Contract Svc-Eng. – Natural Account represents external/third party costs associated with the business development and external affairs and public policy function.
d. GL Account 53150000 – Contract Svc-Other – Natural Account represents external/third party costs associated with the business development and external affairs and public policy function.

e. GL Account 53151000 – Contract Svc-Temp Empl. – Natural Account represents external/third party costs associated with the business development and external affairs and public policy function.
f. GL Account 53155000 – Contract Svc-Legal – Natural Account represents external/third party costs associated with the business development and external affairs and public policy function.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

48. Refer to responses to Staff's Second Request, Item 70, page 4 of 4, Support Services Total Costs. Provide a breakdown of the costs directly and indirectly charged to Kentucky-American. For each category, include a complete description of the services being provided.

a. Investor Relations

b. Legal

c. Technology and Innovation (T&I)

Response:

a. The costs from Investor Relations are allocated to Kentucky-American. The Investor Relations function is responsible for preparation and distribution of financial information that is periodically released to current or potential holders of financial securities of American Water.

b. Please see the attached for breakdown of costs that are directly charged or allocated to Kentucky-American. The cost category identified as Legal comprises both legal and regulatory services to affiliates as follows:
Legal - Provides legal guidance and support for American Water and affiliates, including on governance, ethics and compliance matters, rate and regulatory matters, real estate, contract and commercial, litigation, intellectual property, labor and employment, environmental, acquisitions and divestitures, and any other matters that require support.
Regulatory Services – Provides affiliates with assistance, support and guidance in the preparation and litigation of regulatory proceedings, implementation of rates, and compliance filings associated with regulatory rulings. Stays apprised of economic and regulatory developments and conditions that may affect regulated water utilities and provide analysis, support and guidance related thereto; perform rates and regulatory policy analysis; provide support, guidance and coordination of process improvements to support continuous improvement of rates and regulatory processes and services, as well as data compilation and reporting, data and revenue analysis, and training.

c. Please see the attached for breakdown of costs that are directly charged or allocated to Kentucky-American. Technology & Innovation (T&I) provides information technology systems and support for affiliates. T&I provides local onsite support as well as the T&I Service Desk for remote assistance for all employees using personal computers in the performance of their day to day activities. T&I provides technical expertise in the areas of project governance and release management while ensuring

compliance with all governmental regulations for mission-critical systems such as SCADA as well as emerging technologies such as GIS and Mobility. In addition, T&I Operations provides the network, storage and servers to enable communication systems (telephone/smart phone/mobile devices) for all American Water affiliate employees.

Kentucky-American Water Company
Response to KAW_R_PSCDR3_NUM048, subparts B & C

	2014		2015		2016		2017		2018	
Function	Allocated	Direct	Allocated	Direct	Allocated	Direct	Allocated	Direct	Allocated	Direct
Legal	$ 373,250	$ 50,131	$ 351,390	$ 54,800	$ 409,457	$ 128,974	$ 430,783	$ 138,011	$ 491,697	$ 162,578
Technology & Innovation (T&I)	3,067,980	84,584	2,718,605	75,882	1,848,071	84,497	1,810,544	77,662	1,559,664	72,476
Total	$3,441,230	$134,715	$3,069,995	$130,682	$2,257,528	$ 213,471	$2,241,327	$ 215,673	$2,051,361	$ 235,054

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell/ Kevin N. Rogers

49. Refer to Kentucky-American's Response to the Staff's Second Request, Item 72.

a. In performing its due diligence in the acquisition of North Middletown, explain whether Kentucky-American identified any areas that will require it to make capital investments to maintain or improve North Middletown's facilities. If yes, provide a list of the projects and the estimated cost for each project.

b. Provide a description and quantify the overall benefits (financial and service) that Kentucky-American's existing customer base received in the acquisition of North Middleton.

Response:

A. At this time, KAW has not identified any significant expenditures necessary for the North Middletown's water and waste water facilities. Current expected improvements are ones for efficiencies, integration, and to meet our own internal standards. The cost for these improvements is expected to be approximately $150,000 in total. This is comprised of approximately $75,000 for new meters to be installed in 2019 and approximately $75,000 for SCADA communication equipment to be complete by the end of 2019.

B. Kentucky American's existing customer base will receive a number of overall benefits from the acquisition of North Middletown. Financial benefits would include sharing of fixed overhead costs, expanded economies of scale which optimize cost for attracted capital and purchased supplies, and rate smoothing effects from having a larger customer base over which to spread periodic investments. Service benefits will include the addition of a full-time employee, which will enable the Company to supplement our water quality resources and field work. An additional employee also benefits the customer base in times of emergency when extraordinary resources may be required in other parts of the system. The North Middletown systems tank also expands storage capacity for the entire customer base.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

50. Fair market value (FMV) is defined as the amount for which property would sell on the open market if put up for sale in the ordinary course of business and that FMV is usually determined by the purchase price of similar goods or property in the same locality.[1] Explain how the purchase price paid by Kentucky-American for a facility it acquires would constitute the FMV without considering the purchase price of similar utility assets in the same general area.

Response:

The Company's understanding is that the definition of market value, as used by federal regulating agencies, is "the most probable price that a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

1. Buyer and seller are typically motivated;
2. Both parties are well informed or well advised, and acting in what they consider their best interests;
3. A reasonable time is allowed for exposure in the open market;
4. Payment is made in terms of cash in U.S. dollars or in terms of financial arrangements comparable thereto; and
5. The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale."[2]

The purchase price of the North Middletown water assets was determined under these conditions, given the cash nature of the transaction, the market exposure through a request for proposal, and the arm's length negotiation between a willing buyer and a willing seller. It is consequently reasonable to assume that the purchase price represents the fair market value of the system.

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[1] U.S. Legal, *Fair Market Value Law and Legal Definition*, https://definitions.uslegal.com/f/fair-market-value/.

[2] 12 C.F.R. Part 34.42(g); 55 Federal Register 34696, August 24, 1990, as amended at 57 Federal Register 12202, April 9, 1992; 59 Federal Register 29499, June 7, 1994.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

51. Provide a copy of any appraisals that were performed in connection with the proposed acquisition of North Middletown's facilities.

Response:

While no third-party appraisal was performed, KAW conducted an internal review of the North Middletown facilities and accounting records that were available. No formal document exists but this professional review of the assets was incorporated into the offer and supports the purchase price.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

52. Refer to Kentucky-American's Response to the Staff's Second Request, Item 74.

a. Explain how the elimination of the "Delta Test" would ensure that there are reasonable negations between the parties if whatever a utility is allowed to recover in rates is whatever the utility actually pays for an acquisition.

b. The Uniform System of Accounts for gas utilities states, "The gas plant accounts shall not include the cost or other value of gas plant contributed to the company. Contributions in the form of money or its equivalent toward the construction of gas plant shall be credited to the accounts charged with the cost of such construction." Given that the utility plant values listed for each gas utility is net of contributions, explain the relevance and the reliability of Kentucky-American's comparative schedule.

Response:

a. A fair market value approach in lieu of the criteria established in Case No. 9059 in the 1985 Delta Natural Gas Company case ("Delta Test") would not necessarily mean that "whatever a utility is allowed to recover in rates is whatever the utility actual pays for an acquisition." If the Commission were to adopt a fair market value approach, it would have the opportunity to determine whether the purchase price is equal to fair market value. The Commission can do so by reviewing the acquired utility's financial books along with any other relevant information such as whether those books properly account for all of the acquired utility's assets. In some states where a fair market value approach has been implemented via legislation, external appraisals are obtained. If the Commission adopts such an approach on a going-forward basis and it has any question about whether purchase price equals fair market value, it could consider whether such external appraisals would be worthwhile.

b. Given those accounting instructions, the schedule provided by Kentucky American in response to Staff's Second Request, Item 74, does not provide an "apples to apples" comparison of the ratio of contributions to plant between water and gas utilities. It does provide a lens into the material impact of contributions on the book value of Kentucky water systems, however. When systems have donated capital equal to nearly half of their invested plant, the net book values of the systems are likely to be significantly less than their actual fair market values.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

53. Refer to Kentucky-American's Response to Staff's Second Request, Item 16.

a. Explain how Kentucky-American calculated the total residential service cost for 3/4-inch meters for calendar years 2012–2017. Provide all workpapers and calculations and state all assumptions that show how the total cost was calculated.

b. Refer to the chart at the top of the page titled "Account 12002002 – 5/8" & 3/4" Meter Installations (Settings)." Explain how this chart is used in developing the proposed tap fees.

c. Provide verification and/or invoices for the costs of the 5/8", 1" and 2" meters supplied by Badger Meter Company.

Response:

A portion of this response and the attachments thereto are provided pursuant to a petition for confidential protection.

a. Following is the steps that are taken to calculate the total residential service cost for ¾-innch meters. The steps refer to items in the attached workpapers to assist in understanding the steps.

Step 1: Determined overall number of <u>services</u> installed for 5/8 x 3/4" meters based on:

1) Count of 5/8" and 1" short services installed
2) Count of 5/8" and 1" long services installed
3) Cost to install short and long services
4) Total # of street cuts
5) Cost to completed a street cut

Step 2: Determined overall number of <u>settings</u> installed for 5/8 x 3/4" meters based on:

1) Count of 5/8" and 1" single settings installed
2) Count of 5/8" and 1" dual settings installed
3) Cost to install single service
4) Cost to install dual service

2017	5/8"	Cost	Total	1"	Cost	Total	2"	Cost	Total
Short	340	425	144,616	28	425	11,730	15	600	9,150
Long	287	850	243,718	18	850	15,640	93	1,025	95,325
Street Cuts	134	2,000	267,600	89	2,000	178,400	24	2,000	48,000
Total Services	**627**		**655,934**	**46**		**205,770**	**108**		**152,475**
Single	136	75	10,189	7	75	519	61	400	24,400
Dual	767	150	115,073	39	150	5,862			-
Total Settings	**903**		**125,261**	**46**		**6,381**	**61**		**24,400**
		Total	**781,195**			**212,151**			**176,875**

Step 3: Determined cost of <u>materials and overhead</u> associated with 5/8 x 3/4" and 1" services

2017	5x8 x 3/4"	1"
Contracting	$ 781,195.30	$212,150.97
Materials	8,364.24	14,000.00
Other (labor OH, restoration)	228,289.77	8,624.83
	1,017,849.31	234,775.80

Step 4: Determined total cost per service and setting

		1"	2"			5/8"	1"	2"
	Number	652	21		Number	889	51	42
	Cost	852,055	61,707		Cost	312,297	32,518	30,814
2015	Cost Per Service	$1,307	$2,938	**2015**	Cost Per Setting	$351	$638	$734
	Number	680	42		Number	876	74	42
	Cost	817,472	71,752		Cost	291,390	40,506	33,965
2016	Cost Per Service	$1,202	$1,708	**2016**	Cost Per Setting	$333	$547	$809
	Number	673	108		Number	903	46	61
	Cost	1,120,983	188,144		Cost	361,915	29,006	60,069
2017	Cost Per Service	$1,666	$1,738	**2017**	Cost Per Setting	$401	$631	$985

Step 5: Calculated an average cost per setting and service installed

Account 12002002 - 5/8" & 3/4" Meter Installations (Settings)

Year	Yearly Total (Material, Labor, Etc.)	Number Installed	Average Cost
2017	$ 361,915.29	903	$401
2016	$ 291,389.67	876	$333
2015	$ 312,296.80	889	$351

Account 12005102 - 1" Service Installations

Year	Yearly Total (Material, Labor, Etc.)	Number Installed	Average Cost	Total Cost
2017	$ 1,120,983	652	$ 1,307	$1,937
2016	$ 817,472	680	$ 1,202	$1,750
2015	$ 852,055	673	$ 1,666	$2,303

Step 6: Calculated residential total based on cost of settings and dual services

Residential Service Cost

	3/4" Service & Meter	Cost	3/4"Meter Dual	Cost	Total Residential Cost
2017	0	$ 401	903	$1,054	$1,077
2016	0	$ 333	876	$934	$982
2015	0	$ 351	889	$1,184	$1,181

Step 7: Included the meter/miu charge and calculated 3-year and 5-year average cost for installation of a residential service

2017 contract meter prices - [redacted]

Size	Description	Meter Cost	MIU Cost	Subtotal	6% tax	Total
5/8" meter	5/8 x 3/4 VOGA 19492	[redacted]				
1" meter	ED2F11R7F8S788 - 1 T-10 C/I 302					
2" meter	ED2J11R7F8S788 - 2 T-10 OVAL					

Tap fee:	3-yr avg	2015-2017		Rate case # 2018		
	Service	Meter/MIU	Total	Proposed Tap Fee	Previous Tap Fee	Increase/ Decrease	% Diff
5/8 " meter	[redacted]		$1,223	$1,223	$1,280	($57)	-4.44%
1" meter			$2,174	$2,174	$2,201	($28)	-1.26%
2" meter			$4,002	$4,002	$4,238	($236)	-5.56%

Tap fee:	5-yr avg	2013-2017		Rate case # 2018		
	Service	Meter/MIU	Total	Proposed Tap Fee	Previous Tap Fee	Increase/ Decrease	% Diff
5/8 " meter	[redacted]		$1,220	$1,220	$1,280	($61)	-4.74%
1" meter			$2,030	$2,030	$2,201	($171)	-7.77%
2" meter			$4,304	$4,304	$4,238	$66	1.57%

b) Referring to the chart at the top of the page titled "Account 12002002 – 5/8" & 3/4" Meter Installations (Settings)," this chart reflects the average cost to install a 5/8" x 3/4" meter setting. This average cost is combined with the cost to install a service where the combined costs reflect the cost to install a 5/8 x 3/4" residential setting/service. This cost is combined with the cost of the meter/miu for a total cost of 5/8" & 3/4" meter installations.

Account 12002002 - 5/8" & 3/4" Meter Installations (Settings)			
Year	Yearly Total (Material, Labor, Etc.)	Number Installed	Average Cost
2017	$ 361,915.29	903	$401
2016	$ 291,389.67	876	$333
2015	$ 312,296.80	889	$351
2014	$221,309	444	$498
2013	$350,128	692	$506
2012	$526,180	839	$627

Account 12005102 - 1" Service Installations				
Year	Yearly Total (Material, Labor, Etc.)	Number Installed	Average Cost	Total Cost
2017	$ 1,120,983	652	$ 1,307	$1,937
2016	$ 817,472	680	$ 1,202	$1,750
2015	$ 852,055	673	$ 1,666	$2,303
2014	$ 473,909	444	$ 1,067	$1,582
2013	$ 751,469	719	$ 1,045	$1,582
2012	$ 763,127	460	$ 1,659	$2,874

c. Attached please find sample invoices for the costs of the 5/8" and 1" meters supplied by Badger Meter Company and for the costs of the 2" meters supplied by Sensus. In addition, a sample invoice for the costs of the MIU from Neptune has been provided.

Account 12002002 - 5/8" & 3/4" Meter Installations (Settings)

Year	Yearly Total (Material, Labor, Etc.)	Number Installed	Average Cost
2017	$ 361,915.29	903	$401
2016	$ 291,389.67	876	$333
2015	$ 312,296.80	889	$351
2014	$221,309	444	$498
2013	$350,128	692	$506
2012	$526,180	839	$627
Total	$1,097,616		

2012-2014	3 Year Average =	658	$544
2015-2017	3 Year Average =	889	$362
2013-2017	5 Year Average =	761	$418

Account 12005002 - 3/4" Svc Installations **Do not install

Year	Yearly Total (Material, Labor, Etc.)	Number Installed	Average Cost	Total Cost
2014		0	$0	$498
2013		0	$0	$506
2012		0	$0	$627
Total	$0			
Average =		0	$0	$544

Account 12002102 - 1" Meter Installations

Year	Yearly Total (Material, Labor, Etc.)	Number Installed	Average Cost
2017	$ 29,006	46	$ 631
2016	$ 40,506	74	$ 547
2015	$ 32,518	51	$ 638
2014	$ 18,527	36	$ 515
2013	$ 15,039	28	$ 537
2012	$ 35,232	29	$ 1,215
Total	$68,798		

2012-2014	3 Year Average =	31	$756
2015-2017	3 Year Average =	57	$583
2013-2017	5 Year Average =	47	$573

Account 12005102 - 1" Service Installations

Year	Yearly Total (Material, Labor, Etc.)	Number Installed	Average Cost	Total Cost
2017	$ 1,120,983	652	$ 1,307	$1,937
2016	$ 817,472	680	$ 1,202	$1,750
2015	$ 852,055	673	$ 1,666	$2,303
2014	$ 473,909	444	$ 1,067	$1,582
2013	$ 751,469	719	$ 1,045	$1,582
2012	$ 763,127	460	$ 1,659	$2,874
Total	$1,988,505			

2012-2014	3 Year Average =	541	$1,257	$2,013
2015-2017	3 Year Average =	668	$1,392	$1,974
2013-2017	5 Year Average =	634	$1,257	

Account 12002302 - 2" Meter Installations

Year	Yearly Total (Material, Labor, Etc.)	Number Installed	Average Cost
2017	$ 60,069	61	$ 985
2016	$ 33,965	42	$ 809
2015	$ 30,814	42	$ 734
2014	$ 17,632	35	$ 840
2013	$ 45,297	21	$ 1,294
2012	$ 57,354	23	$ 2,494
Total	$120,283		

2012-2014	3 Year Average =	26	$1,542
2015-2017	3 Year Average =	48	$842
2013-2017	5 Year Average =	40	$932

Account 12005302 - 2" Service Installations

Year	Yearly Total (Material, Labor, Etc.)	Number Installed	Average Cost	Total Cost
2017	$ 188,144	108	$1,738	$2,723
2016	$ 71,752	42	$1,708	$2,517
2015	$ 61,707	21	$2,938	$3,672
2014	$ 50,084	21	$2,385	$3,225
2013	$ 64,518	22	$2,933	$4,227
2012	$ 38,719	24	$1,613	$4,107
Total	$153,321			

2012-2014	3 Year Average =	22	$2,310	$3,853
2015-2017	3 Year Average =	57	$2,128	$2,971
2013-2017	5 Year Average =	43	$2,340	

Residential Service Cost

	3/4" Service & Meter	Cost	3/4"Meter Dual	Cost	Total Residential Cost
2017	0	$ 401	903	$1,054	$1,077
2016	0	$ 333	876	$934	$982
2015	0	$ 351	889	$1,184	$1,181
2014	0	$ 498	444	$1,032	$1,078
2013	0	$ 506	692	$1,029	$1,063
2012	0	$ 627	839	$1,457	$1,395

3 year	2012-2014	Average =	$1,178
3 year	2015-2017	Average =	$1,080
5 year	2013-2017	Average =	$1,076

	1" Service for Duals	x 2
2017	606	1212
2016	606	1212
2015	622	1244
2014	408	816
2013	691	1382
2012	431	862

Tap fee:		3-yr avg	2012-2014			Rate case # 2015		
		Service	Meter/MIU	Total	Proposed Tap Fee	Previous Tap Fee	Increase	% Diff
	5/8 " meter	[redacted]		$1,280	$1,280	$1,078	$202	18.76%
	1" meter			$2,201	$2,201	$1,516	$685	45.21%
	2" meter			$4,238	$4,238	$3,563	$675	18.93%

Tap fee:		3-yr avg	2015-2017			Rate case # 2018		
		Service	Meter/MIU	Total	Proposed Tap Fee	Previous Tap Fee	Increase/ Decrease	% Diff
	5/8 " meter	[redacted]		$1,223	$1,223	$1,280	($57)	-4.44%
	1" meter			$2,174	$2,174	$2,201	($28)	-1.26%
	2" meter			$4,002	$4,002	$4,238	($236)	-5.56%

Tap fee:		5-yr avg	2013-2017			Rate case # 2018		
		Service	Meter/MIU	Total	Proposed Tap Fee	Previous Tap Fee	Increase/ Decrease	% Diff
	5/8 " meter	[redacted]		$1,220	$1,220	$1,280	($61)	-4.74%
	1" meter			$2,030	$2,030	$2,201	($171)	-7.77%
	2" meter			$4,304	$4,304	$4,238	$66	1.57%

2017 contract meter prices - [redacted]

Size	Description	Meter Cost	MIU Cost	Subtotal	6% tax	Total
5/8" meter	5/8 x 3/4 VOGA 19492	[redacted]				
	ED2F11R7F8S788 - 1 T-					
1" meter	10 C/I 302					
	ED2J11R7F8S788 - 2 T-					
2" meter	10 OVAL					

Services (taps)				Settings				
		1"	2"			5/8"	1"	2"
	Number	460	24		Number	839	29	23
	Cost	763,127	38,719		Cost	526,180	35,232	57,354
2012	Cost Per Service	$1,659	$1,613	2012	Cost Per Service	$627	$1,215	$2,494
	Number	719	22		Number	692	28	35
	Cost	751,469	64,518		Cost	350,128	15,039	45,297
2013	Cost Per Service	$1,045	$2,933	2013	Cost Per Service	$506	$537	$1,294
	Number	444	21		Number	444	36	21
	Cost	473,909	50,084		Cost	221,309	18,527	17,632
2014	Cost Per Service	$1,067	$2,385	2014	Cost Per Service	$498	$515	$840
		1"	2"			5/8"	1"	2"
	Number	652	21		Number	889	51	42
	Cost	852,055	61,707		Cost	312,297	32,518	30,814
2015	Cost Per Service	$1,307	$2,938	**2015**	Cost Per Setting	$351	$638	$734
	Number	680	42		Number	876	74	42
	Cost	817,472	71,752		Cost	291,390	40,506	33,965
2016	Cost Per Service	$1,202	$1,708	**2016**	Cost Per Setting	$333	$547	$809
	Number	673	108		Number	903	46	61
	Cost	1,120,983	188,144		Cost	361,915	29,006	60,069
2017	Cost Per Service	$1,666	$1,738	**2017**	Cost Per Setting	$401	$631	$985

2015 - 2017 New Services and Settings

* 5/8" Service = 1" Service - separated counts based on contractor invoice

2015	5/8"	Cost	Total	1"	Cost	Total	2"	Cost	Total
Short	326	425	138,619	31	425	13,005	5	600	3,150
Long	275	850	233,612	20	850	17,340	16	1,025	16,144
Street Cuts	70	2,000	139,200	46	2,000	92,800	10	2,000	20,000
Total Services	**601**		**511,431**	**51**		**123,145**	**21**		**39,294**
Single	134	75	10,031	48	75	3,634	21	400	8,400
Dual	755	150	113,288	3	150	383			-
Total Settings	**889**		**123,319**	**51**		**4,016**	**42**		**8,400**
		Total	**634,750**			**127,161**			**47,694**

5/8"		1"	2"
54.27%	Short/Long %	60.00%	25.00%
45.73%	Short/Long %	40.00%	75.00%
15.04%	Single %	95.00%	Single %
84.96%	Dual %	5.00%	Dual %

2016	5/8"	Cost	Total	1"	Cost	Total	2"	Cost	Total
Short	329	425	139,772	44	425	18,870	11	600	6,300
Long	277	850	235,555	30	850	25,160	32	1,025	32,288
Street Cuts	59	2,000	118,800	40	2,000	79,200	8	2,000	16,000
Total Services	**606**		**494,128**	**74**		**123,230**	**42**		**54,588**
Single	132	75	9,884	11	75	835	42	400	16,800
Dual	744	150	111,632	63	150	9,430			-
Total Settings	**876**		**121,516**	**74**		**10,265**	**42**		**16,800**
		Total	**615,644**			**133,495**			**71,388**

5/8"		1"	2"
54.27%	Short/Long %	60.00%	25.00%
45.73%	Short/Long %	40.00%	75.00%
15.04%	Single %	95.00%	Single %
84.96%	Dual %	5.00%	Dual %

2017	5/8"	Cost	Total	1"	Cost	Total	2"	Cost	Total
Short	340	425	144,616	28	425	11,730	15	600	9,150
Long	287	850	243,718	18	850	15,640	93	1,025	95,325
Street Cuts	134	2,000	267,600	89	2,000	178,400	24	2,000	48,000
Total Services	**627**		**655,934**	**46**		**205,770**	**108**		**152,475**
Single	136	75	10,189	7	75	519	61	400	24,400
Dual	767	150	115,073	39	150	5,862			-
Total Settings	**903**		**125,261**	**46**		**6,381**	**61**		**24,400**
		Total	**781,195**			**212,151**			**176,875**

5/8"		1"	2"
54.27%	Short/Long %	60.00%	25.00%
45.73%	Short/Long %	40.00%	75.00%
15.04%	Single %	95.00%	Single %
84.96%	Dual %	5.00%	Dual %

2015	5x8 x 3/4"	1"	2"
Contracting	$ 634,750.10	$ 127,161.25	$ 47,693.75
Materials	29,819.29	22,807.20	15,204.80
Other (labor OH, restoration)	159,158.26	5,694.80	7,208.83
	823,727.65	**155,663.25**	**70,107.38**
Avg per Tap	**1,370.60**	**3,052.22**	**1,669.22**

2016	5x8 x 3/4"	1"	2"
Contracting	$ 615,643.54	$ 133,495.04	$ 71,387.50
Materials	6,975.81	16,480.29	9,354.94
Other (labor OH, restoration)	162,897.93	13,760.23	7,809.86
	785,517.29	**163,735.57**	**88,552.30**
Avg per Tap	**1,296.23**	**2,212.64**	**2,108.39**

2017	5x8 x 3/4"	1"	2"
Contracting	$ 781,195.30	$ 212,150.97	$ 176,875.00
Materials	8,364.24	14,000.00	18,565.19
Other (labor OH, restoration)	228,289.77	8,624.83	17,103.88
	1,017,849.31	234,775.80	212,544.07
Avg per Tap	**1,623.36**	**5,103.82**	**3,484.33**

	5x8 x 3/4"	1"	2"
Three Year Avg	1,430.06	3,456.23	2,420.65
Meter Cost	[redacted]		
Total	**$ 1,573.61**	**$ 3,655.69**	**$ 3,451.95**

ATTACHMENT C TO KAW_R_PSCDR3_NUM053_030119 FILED UNDER SEAL PURSUANT TO THE PETITION FOR CONFIDENTIAL TREATMENT FILED ON MARCH 1, 2019

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Constance E. Heppenstall

54. Refer to Kentucky-American's Response to Staff's Second Request, Item 76. Ms. Heppenstall corrected her testimony stating that the estimated demands were based on the demand factors reflected from the Customer Class Water Demand Study-1999 performed by Burgess and Niple. Given that this study is almost ten-years old, explain whether Kentucky-American believes the results are still applicable today given efficiency and conversation efforts.

Response:

It is not evident whether the Burgess and Nipple Customer Class Water Demand Study are out of date. However, as shown below, the results appear not to be out of line with other demand studies performed more recently:

	Kentucky American Water	Kentucky American Water	United Water Pennsylvania*	Pennsylvania American Water	West Virginia American Water	Illinois American Water
Year(s) Performed	Used in COS	1999	2010-2011	2013-2015	2008	2007
Maximum Day Demand Ratios						
Residential	2.00	1.90	1.60	2.00	1.40	2.20
Commercial/Multi-Family	1.90	1.85	1.60	2.10	1.50	1.50
Industrial	1.70	1.69	1.70	1.50	1.20	1.70
Other Public Authority	1.75	1.74/1.68		1.40		1.40
Wholesale Customers	1.70	1.69	1.60	1.40	1.30	1.30
Maximum Hour Demand Ratios						
Residential	2.90	NA	2.70	5.00	3.40	6.00
Commercial/Multi-Family	2.80	2.62	5.00	4.60	3.60	4.30
Industrial	2.15	2.13	4.80	1.70	3.60	3.00
Other Public Authority	2.10	2.08		2.40		2.80
Wholesale Customers	1.90	1.91	4.00	3.20	1.60	2.00

* Currently SUEZ Water Pennsylvania.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Ann E. Bulkley

55. The Federal Reserve recently signaled that they were not going to increase interest rates in March 2019.[1] Explain if this affects Kentucky-American's ROE analysis.

Response:

The Federal Reserve's recent indication that will it will be patient in determining future adjustments to the federal funds rate does not affect Ms. Bulkley's recommendation of a 10.80 percent ROE for KAWC. It is not unusual for the Federal Reserve to be patient with the course of monetary policy as it has a lagged effect on the economy. The Federal Reserve Bank of San Francisco notes that:

> It can take a fairly long time for a monetary policy action to affect the economy and inflation. And the lags can vary a lot, too. For example, the major effects on output can take anywhere from three months to two years. And the effects on inflation tend to involve even longer lags, perhaps one to three years, or more.[2]

Since December 2015, the Federal Reserves has increased the federal funds rate nine times, four of which occurred in 2018 and three in 2017. Therefore, given recent market volatility and lagged effect that monetary policy has on the economy, it is reasonable to expect the Federal Reserve to be patient with future increases. However, it is important to note, that the Federal Reserve is continuing to reduce the size of its balance sheet by no longer reinvesting the proceeds of the bonds it holds. This policy in conjunction with the lagged effect of past increases in the federal funds rate suggests that the yields on long-term government bonds should continue to increase over the near-term which is consistent with investors' expectations. As a result, the recent pause in federal funds rate increases has not affected Ms. Bulkley's recommended ROE for KAWC.

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[1] https://www.nytimes.com/2019/01/09/business/economy/fed-interest-rates-minutes.html

[2] Federal Reserve Bank of San Francisco, "U.S. Monetary Policy: An Introduction - How does monetary policy affect the U.S. economy?", February 6, 2004. https://www.frbsf.org/education/teacher-resources/us-monetary-policy-introduction/real-interest-rates-economy/

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Ann E. Bulkley

56. Refer to Kentucky-American's Response to Staff's Second Request, Item 87b. Ms. Buckley states that Kentucky-American's proposed ROE of 10.80 percent is with the assumption that the proposed QIP is approved. Explain what ROE Kentucky-American proposes if the proposed QIP is not approved and provide support for this proposed ROE. Calculate the revenue requirement impact the revised ROE would have.

Response:

As discussed in the Response to Staff's Second Request, Item 87b, Kentucky-American's risk would be greater than the proxy group if the Company were unable to recover infrastructure replacement costs through infrastructure surcharge mechanism given the prevalence of such mechanisms in the operating jurisdictions of the proxy group companies. However, as discussed on page 5, lines 1-3 of Ms. Bulkley's Direct Testimony, specific adjustments to Kentucky-American's ROE were not made to account for the Company's business risks as compared to the proxy group companies. Instead, Ms. Bulkley considered the business risks in determining where the Company's ROE should fall within the ranges of analytical results.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

57. Refer to Kentucky-American's Response to Staff's Second Request, Item 92. Provide an explanation for the decline in Kentucky-American's earned ROE beginning in August 2018.

Response:

Kentucky-American's ROEs were increased from September 2017 through August 2018 due to a $6.5 million pre-tax gain on a sale of land that took place in September 2017. While the ROE drops somewhat in August 2018, it drops significantly in September 2018, as the impact of the land sale falls off.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Scott W. Rungren

58. Refer to Kentucky-American's Response to the Attorney General's First Request for Information, Item 48. Since 2010, the percent of common equity to total capital has increased from less than 45 percent to almost 47.5 percent. Also, refer to the application, the Direct Testimony of Scott W. Rungren, Exhibit SWR-1. Here the forecasted percent of common increased to 48.7. Provide an explanation for the increase in the ratio of common equity to total capital.

Response:

On April 16, 2007 the KPSC issued its Order in Case No. 2006-00197, which concerned the "Joint Petition of Kentucky-American Water Company, Thames Water Aqua Holdings Gmbh, RWE Aktiengesel/schaft Thames Water Aqua US Holdings, Inc., and American Water Works Company, Inc. for Approval of a Change in Control of Kentucky-American Water Company." Condition 16 in that Order required Kentucky-American to maintain its common equity ratio within the range of 35 percent to 45 percent. Condition 16 remained in effect until the KPSC released Kentucky-American from this requirement when it issued its Order in Case No. 2015-00418 on August 23, 2016. Thus, from April 2007 to August 2016, the Company was required to maintain a common equity ratio at or below 45 percent, but not lower than 35 percent. Since being released from that restriction the Company has gradually increased its common equity ratio. It should also be noted that Kentucky-American's proposed 48.65 percent common equity ratio is lower than the mean common equity ratios of the water utility proxy group ("WPG") and the combined utility proxy group ("CUPG") used by Company witness Ann Bulkley to perform her cost of equity analysis in this case. Ms. Bulkley presented the mean common equity ratios of her proxy groups as of December 31, 2017 on page 77 of her direct testimony, which are as follows:

WPG (excluding AWK)	-	54.27 percent
WPG (including AWK)	-	51.63 percent
CUPG (excluding AWK)	-	50.22 percent
CUPG (including AWK)	-	49.46 percent

Kentucky-American's proposed common equity ratio is lower than the WPG and CUPG averages shown above. For the complete analysis supporting the reasonableness of the Company's proposed capital structure please see pages 76-79 of Ms. Bulkley's direct testimony.